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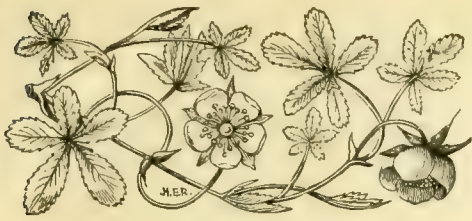
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THE

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THE PAST CENTURY.

THE first thirty years of the century which has just closed were passed in a time of great political excitement at home; the people were groaning under a heavy load of taxation; political liberty was restricted, and penal laws cruel in the extreme. During such a time Horticulture was at a low ebb. It was scarcely a period to spend money on pleasures; there were dangers abroad, and unrest at home. In Lancashire, at Norwich, and elsewhere, where they formed little colonies, the Flemish weavers were tending their Auriculas and Tulips, which their forefathers had brought with them at the time of the immigration, as things too precious to leave behind them; and they, living somewhat apart from the peoples among whom they settled, kept alive their love for such subjects by carefully tending them.

Glass erections for the culture of plants, such few as existed, were heavy in design and uncouth in appearance; cumbrous wood-work and fanciful elevations operated to make such houses ill adapted for the successful cultivation of plants. Heating by means of hot-water apparatus was unknown

until some years afterwards; the old brick or tile flue, and the Polmaise system, which was based upon the principle of drawing the cold air from the house or pit, and forming a chamber round the stove, were in operation. It is curious to note how steadily the introduction of heating by hot-water pipes was resisted in some quarters. JOHN ABERCROMBIE, in 1820, writes of the forcing-house, furnished with "internal flues, ranged along the front, or middle, for fire-heat, and sometimes with a pit for a bark-bed, or dung heat, extending along the middle space within" as a perfect system of heating, and the opponents of the new system contended that brick-flues coloured Grapes far better than they would colour under any other system of heating. Plant culture was imperfectly understood; the great bulk of the gardeners in those days confined the culture of their choice plants to small pots, as they appeared to have but little idea of forming specimens. They were grown on steep stages, rising by successive narrow shelves to near the roofs of the house, and I have heard the late Mr. JOHN LEE declare that he had known cases of gardeners using the shears for the purpose of keeping the growing shoots within due bounds. The gardener I worked under as a lad, in the early forties, appeared to have no idea of growing any plant in a larger-sized pot than a forty-eight or thirty-two, with a stake to each to which the plant was attached. But he was, perhaps, scarcely a fair illustration of the gardeners of his day, and he re-potted everything in one stated week in the year.

In the first twenty years of the century, but very few of the leading subjects cultivated in our days had been introduced. A few were to be found in gardens, such as Allamanda cathartica, Amaryllis reticulata (A. vittata is not mentioned, though it would appear DEAN HERBERT was at work with this quite by 1820), Ixoras alba and coccinea, Gloxinia maculata, Plumbago rosea, Vinca rosea and its white variety, and a few others. In the forties and fifties the brothers MAY, COLE, BARNES, GREEN, CARSON, GLENDINING, the brothers FRASER, and others, were exhibiting many hard-wooded plants, such as Adenandra, Aphelandra, Chorizema, Correa, Crowea, Cyrtoceras Darwinia, Dracophyllum, Eriostemon, Franciscea, Gompholobium, Justicia, Kalosanthes, Medinilla, Metrosideros, Meyenia erecta, Monochaetum, Pavetta, Polygala, Sollya, Swainsonia, Tecoma, Tetratheca, Thyrsacanthus, Tremandra, &c., that are now very rarely seen at a first-class exhibition, and which there is reason to fear are in danger of being lost to cultivation. With the advent of THOMAS BAINES and his compeers, came almost a new group of specimen Stove Plants, for there had been meanwhile introduced Dipladenias, Clerodendrons, Ixoras, Allamandas, Bougainvillea, several Ericas, Epacris, Statice, Stephanotis, &c., which remain to this day the leading exhibition subjects, with Eucharis, Anthurium, Lapageria, &c. The Camellia, once the most popular of greenhouse plants, has gone through a period of decline in the public estimation, probably on account of the severe symmetry of its blossoms, which do not commend themselves to the present-day tastes. Still it is a conservatory plant almost without a rival. Its ample leafage is always handsome, and the habit of growth on the whole desirable. It is occasionally said there are signs of revival of the Camellia in the estimation of the gardening public, which is a reasonable assumption.

Azalea indica was introduced in 1806, A. amoena

and A. sinensis are later introductions. In 1823-1824 appeared A. variegata, A. ledifolia, and others, also introductions from China; and by 1850, some twenty or so named varieties had been collected, the result of cross-breeding. Such names as IVORY, KNIGHT, KINGHORN, SMITH, and LEE, were among the earliest improvers of the Azalea in this country, and it is not to be wondered that it became a very popular conservatory and exhibition subject. Of late years the greater part of the new varieties have come from abroad, including double forms of great beauty, and a few have originated by means of sports. Mr. W. CARMICHAEL and others have obtained valuable hybrids by crossing A. amoena with A. indica. The Azalea bids fair to remain a popular plant for many years to come. There were double-flowered varieties as far back as 1850. During the first quarter of the last century, no attempt appears to have been made to improve Cyclamen persicum (latifolium) introduced nearly a century before. It would be difficult to state who were among the first to lead the way in improving the type by means of seeding from it. KENDALL, of Stoke Newington, was among the first to recommend taking the seed and raising seedlings—this he was doing nearly sixty years ago; and after him came a number of others, all of whom in some degree assisted the advance. Rich, deep colours have been imparted to the flower; a large flowered section has been obtained; and also what is known as the "Butterfly Section" with thin plumed and fringed petals; a singular and attractive break which is destined to add additional value to the Cyclamen as a decorative agent.

In the early part of the century Cannas indica and glauca were included among Scitamineous hothouse plants. It was not until Mr. A. ROGER, within the last forty years, used the few Cannas then in cultivation in his illustrations of sub-tropical gardening in Battersea Park, that the plant became popular, and since then, by the aid of M. CROZY and others, improvements have gone on by leaps and bounds. In the greenhouse and conservatory, and also in the open ground in summer the Canna is an invaluable decorative subject, with handsome leafage and brilliant blossoms of larger size.

Several species of Gardenia were in cultivation in the early part of the century; among them G. florida introduced from China a half century previously, and G. radicans, which came from Japan in 1804. We have witnessed the Gardenia ranking as the chief button-hole flower of the rich; and we have seen it hawked in the streets of London at one penny per bloom. Its almost overpowering fragrance has perhaps operated to bring about something in the way of neglect.

The introduction of Rhododendron javanicum in 1847 gave the introducers, Messrs. VEITCH & SONS, an opportunity to employ it for the purposes of hybridisation, and there has resulted a race of greenhouse Rhododendrons, double and single-flowered, that bloom during the autumn and winter as well as in spring and summer, of brilliant and varied colours, producing large bold trusses of bloom. They gleam forth amid the murky days of mid-winter with a brilliance peculiarly their own.

Clivia miniata and the many fine varieties raised from it is a product of the latter half of the past century. But little variation has come in the way of colour, as the varieties are restricted to yellow and orange shades; the plant has yet a great decorative value, its imposing trusses of bloom being very striking in appearance. R. D.

(To be continued.)

ANTHURIUM BAKERI,*

Hook. f.

Of all the Aroids, the genus *Anthurium* yields more species of horticultural value and in greater variety than any other, and altogether about 350 species have been described, of which about one-third have been in cultivation. For horticultural purposes these may be classed under three headings, viz.:—1. Species with ornamental foliage, such as *A. Veitchii*, *A. crystallinum*, *A. magnificum*, and the superb but difficult to cultivate *A. splendens*. 2. Species with showy inflorescences, such as *A. Andreanum*, *A. Scherzerianum*, *A. ornatum*, &c. 3. Species that are most ornamental when in fruit; there are not many that can be classed under this heading, but amongst them *A. Bakeri* takes first rank; others that may be mentioned are *A. Hegelianum* and *A. violaceum*.

A. Bakeri is neither more nor less ornamental than many other of the less showy species when in flower, but when in fruit, the long, stout spadix, replete with bright scarlet berries, make it a very effective decorative plant. It was introduced from Costa Rica about the year 1871 by Mr. W. Bull, of the New Plant Nursery, Chelsea, to whom we are indebted for the introduction of many other handsome members of this genus, and was figured in the *Botanical Magazine* at t. 6261. N. E. Brown.

THE ROSARY.

AMERICAN ROSES AT CHRISTMAS.

SPECIMENS have reached us from Philadelphia, through Messrs. Sander of St. Albans and of New York, of a fine Rose, called *Queen of Edgely*, said to have originated as a sport from *American Beauty*. They were cut in time for the departure of the "Lucania," and placed in the refrigerating chamber of the steamer. On unpacking the case, the foliage and flowers would have been in first-rate condition were it not that the petals fell off immediately. The long, stout shoots indicate a vigorous growth; the rind is smooth, green, with remote, strongly recurved prickles. The stipules, adnate at the base, end in lanceolate spreading tips, with stalked glands at the margin. The glabrous leaflets are ovate, acute, dentate. The flowers are of medium size, verging to large, globular; sepals strongly deflexed, downy on the inner surface; petals concave, straight-edged, not recurved, of a pretty shade of rose-pink, and delightfully fragrant. This latter characteristic is the most important feature of the specimens sent to us, as so many modern Roses are destitute of what is almost, if not quite, the greatest charm of a Rose.

It seems that a similar consignment was sent to the Queen, at Osborne, and that Her Majesty was more fortunate than we were, inasmuch as the Roses were in sufficiently good condition to be used for decorative purposes. A daily paper, January 2, in recording this occurrence, has the following remarks, which are so amusing and seasonable, that we give them a place here for the benefit of our rosarians. We must all have been asleep when that Rose show was held in Buckingham Palace—if ever it was; and we rub our eyes in the endeavour to recognise the British Horticultural Society.

"Perhaps the most pleasing gift that came to the Queen on Christmas among the myriad tokens of love from all parts of

the world was the box of magnificent 'Queen of Edgely' Roses from Philadelphia.

"The Roses were a feature of the decorations at Osborne, and they are still bright and fresh, though more than a week has passed since the 'Lucania' brought them to Liverpool, as was then related by the *Express*.

"It took no less than two years to produce the twelve magnificent Roses presented to the Queen on the last Christmas of the century. Two years ago, when the British Horticultural Society held an exhibition of Roses in Buckingham Palace, Her Majesty graciously asked Mr. David

"After twenty-four months [he accomplished both ends, and sent the dozen promised Roses in charge of a famous London florist and Orchid collector on the 'Lucania.' The Roses are superb, being 8 inches in diameter and having stems 1 yard long.

"The large blooms are shaped like the *American Beauty*, but are a bright pink colour.

"The precious flowers arrived in perfect condition. The ends of the stems were placed in long glass vials filled with water, and capped by rubber fitted closely around the stem. The opening buds were then wrapped up in waxed paper to exclude the air, and then the Roses, stem and all, were buried, each by itself, in soft moss dampened and packed in cracked ice.

"The box of Roses was then sealed in a strong box and placed in the 'Lucania's' cold storage room. When the box was opened it was found that the buds had burst into full bloom, and were entrancingly fragrant and beautiful.

"They were consigned to the Secretary for Foreign Affairs, who saw that they were safely delivered to her Majesty. Thus it was that the loveliest and largest Roses in the world came to the Queen (and to the *Gardeners' Chronicle*) on Christmas."

ROSA PERNETIANA.

A coloured plate of a new Rose, "*Soleil d'Or*" (*Rosa Pernetiana*), is included in the October-November number of the *Rosen-Zeitung*. Mr. P. Lambert gives a description of the first introduction of this Rose at an exhibition of the Lyons Horticultural Society in 1898, on which occasion the parentage of the Rose excited more interest than did the flowers themselves. Since then, the German grower Herr Ducher has co-operated with M. Y. Pernet, the introducer of the hybrid, and the result has been the production of small plants for hot-houses, very bushy and compact in habit, thickly covered with foliage, and covered abundantly with buds and flowers, which should be in perfection about Easter. It is a Rose that is suitable for forcing in pots, but is of little value as a long-stalked flower for decorative purposes; its newest feature lies in its persistent blooming. The parent "*Persian Yellow*" flowers but once, whereas "*Soleil d'Or*" produces a succession of blooms. The grower describes it as a new species (which, of course, it is not) *Rosa Pernetiana*, which he should not have done, and it is expected that other striking novelties will result from its propagation.

ROSE LITERATURE.

The literature of the Rose is as attractive in its way as the Rose itself. This may seem a sweeping generalisation, but taken with the necessary modifications and exceptions, it is substantially true. M. Graveriau has established what M. Viger terms "a museum of Roses, and collected thousands of Roses in a garden laid out with exquisite taste and unrivalled skill. There, in that state, governed with as much devotion as ability, you care for your subjects, you bring them up, you marry their children. By well-assorted unions you seek to obtain new generations more beautiful even than their predecessors. Lastly, not contented with collecting, preserving, multiplying, transforming Roses of our gardens, you seek to afford to pure science intelligent aid. In establishing a botanical collection of the genus *Rosa*, you enable the botanist as well as the practical man to widen the horizon of their studies and increase the boundaries of their experience." The preceding words are freely translated from M. Viger's letter prefixed to a little publication called the *Roseraie de l'Hajj*. In the first instance a detailed catalogue of the species of Rose, grouped according to the classification of M. Crépin, is given. This is followed by a similar enumeration of upwards of 3000 cultivated varieties, grouped as hybrid perpetuals, Teas, hybrid Teas, Bourbons, Polyantha, Centifolia, Moss, Provins, Pimprenelles, Capucines, Portland, Damask, alba, rugosa, and climbing Roses. Numerous plans and small illustrations serve to give some notion of the exceeding richness of this collection, and the scientific method in which it is maintained. As a reference catalogue, it will be serviceable to amateurs of all nations, and M. Graveriau empowers us to say that he will willingly send copies to those rosarians who make a study of the subject, on application to him at 4, Avenue de Villars, Paris.

The third edition of a very serviceable little



FIG. 1.—ANTHURIUM BAKERI: BERRIES SCARLET.

Fuerstenberg, a veteran Rose-grower of Philadelphia, what he, as an American, thought of the English Roses?

"He replied that they were very pretty, but that everyone grew better Roses in the States. He pointed out that the Roses were small, and the stems short, whereas in America great Roses were grown with yard-long stems.

"Her Majesty expressed a preference for fragrance and delicate loveliness, rather than for size and length of stem, but said that she would like to see the gorgeous American Roses.

"The American, on his return home, began experimenting in order to produce the finest Roses ever grown, and also to discover a method of preservation certain for at least twelve days.

The following is a brief description of the plant:—

Leaves erect; petiole 4 to 8 in. long, 2 to 3 lines thick, flat on the face, rounded and slightly keeled on the back; blade 13 to 20 in. long, 1½ to 2½ in. broad, narrowly oblong-lanceolate, about equally tapering at both ends, acute, 3-nerved, punctate-dotted beneath; midrib rounded above, acutely keeled beneath (the keel is not properly represented in the figure). Peduncles 4 to 12 in. long, terete, 1½ to 2½ lines thick. Spathes spreading, 1 to 1½ in. long, 1 to 1½ in. wide, oblong, obtuse, apiculate, light green. Spadix pale greenish-white, 1 to 2½ in. long, 2 to 3½ lines thick, enlarging to 5½ in. long and 1 to 1½ in. thick in fruit. Berries half-protruding, conically pointed, bright, shining scarlet. *Anthurium Bakeri*, Hook. f. in *Bot. Mon.* t. 6261; Engler in *D. C. Monog. Phanerog.*, v. 2, p. 122; Engler, *Botanische Jahrbücher*, v. 25, p. 418. N. E. Brown.

pamphlet, entitled *Hints on Planting Roses*, has been issued by the National Rose Society. It is intended for beginners, and may be had for a few pence from either of the Secretaries of the society, Rev. H. H. D'Ombraim, Westwell Vicarage, Ashford, Kent; or E. Mawley, Esq., Rosebank, Berkhamsted, Herts. A select list of Roses suitable for exhibition purposes, or for the decoration of gardens, adds to the utility of the publication, by relieving the novice of the perplexity occasioned by the *embarras du choix*.

Miss Jekyll's paper, entitled "*Suggestions for the Decorative Use of some Garden Roses*," read at the meetings of the National Rose Society at Salisbury and at Birmingham respectively, must make many people whose space is limited, envious of those to whom space is not an object. We scarcely dare whisper it, but it is a fact that in many small



JOHN LINDLEY: FOUNDER AND FIRST EDITOR OF THE "GARDENERS' CHRONICLE."

gardens the rampant climbers are—well, out of place. Where circumstances permit of their realisation, Miss Jekyll's suggestions are very valuable. This pamphlet, like the one above mentioned, can be had from either of the Secretaries of the National Rose Society, whose addresses have been given above.

ROSE KAISERIN AUGUSTA VICTORIA.

I should like to mention my experience with the Rose Kaiserin Augusta Victoria, and to ask whether it is a matter of common experience. It is this, viz., that the buds, when picked in a very firm and unopening form, open out into a full flower, even at this time of year, in a way very unusual, if not unknown with most Roses. About the 10th ult. I picked out-of-doors a bud about half an inch or less in length, and less than a quarter of an inch in largest diameter, and after three or four days in water it opened out into a full-blown and well-formed flower, though showing a little centre. *Rus in Urbe*.

TREES AND SHRUBS.

THE SIBERIAN LARCHES.

As I have not yet seen Prof. Mayr's observations on the Siberian Larch, I can only offer some remarks on the extracts from it in the *Gardeners' Chronicle*, December 29, but I think that English planters should wait for more detailed and exact information before planting it largely.

First of all, what does Prof. Mayr mean by the Siberian Larch? because there are at least three varieties or species of Larch in Siberia. First, the Larch found in the north and north-east of Russia, which is, according to Koch, *Larix intermedia* of Fischer; according to Masters, *Larix europæa* var. *sibirica* of Loudon, but perhaps not

Mr. Watt, of Little & Ballantine's, that he should procure some seed. This he did, and has now a fine breadth of it in the Carlisle nurseries, which look well, but about which I would rather ask him to give particulars.

Mr. R. Anderson, however, has told me that in Earl Bathurst's nursery at Cirencester it grows about 3 inches a year, as compared with a foot of growth made by the common Larch in the same ground. Johannes Rafn, of Copenhagen, in his seed catalogue states as follows:—"This species is like the Siberian Silver Fir (*A. sibirica*), and the Siberian Spruce (*P. obovata*), most suitable for localities with a marked continental climate. In more temperate climates it starts growth early in spring, and gets damaged by late frosts." Probably he also is speaking of the variety from north-east Russia.

When I was in the Altai two years ago, I found Ledebour's Larch forming magnificent timber at from about 3,500 to 6,500 feet, but confined to the dryer parts of the mountains, where the snow does not, as a rule, lie deep in winter, and where the climate is very severe. It does not commence growth until June, and is exposed to frosts on clear nights, and frequent hail and snowstorms all through the summer. Its growth is slow, as I found seedlings which showed twenty-five years and over of growth, which were only 6 to 10 feet high, and 1½ inch in diameter, but these were at the highest elevation on the Mongolian frontier in lat. 62°. I could not procure seed of this, but have recently received some from Professor Fischer de Waldheim at St. Petersburg from the province of Tula in European Russia, of which I shall be happy to send a few to those who may wish to try them.

The Dahurian Larch, which is probably the same as this Altai one, is said to extend to lat. 72° N., and its supposed variety *japonica* attains a great size in the island of Yezo in north Japan, as shown by a very good photograph taken by Prof. Mayr, and reproduced in Prof. Sargent's beautiful work on the *Forest Flora of Japan*. This form is in cultivation in Germany, but I do not know with what results. Probably it might be suitable to the higher elevations in Scotland.

Has anyone attempted to raise hybrids between different species of *Larix* or any other Conifers? Having regard to the inestimable value of the Larch as a forest tree, and the well known vigour of growth and constitution which distinguishes so many hybrids, I think it would be well worth trying. A young man might live to see himself famous as the raiser of such a cross. *H. J. Elwes, Colesborne, Gloucestershire*.

ORCHID NOTES AND GLEANINGS.

CYPRIPEDIUM × NIOBE.

FIRST flowered by Messrs. James Veitch & Sons in 1889, this pretty cross, derived from *C. Spicerianum* and *C. Fairieanum*, was a favourite from the first; but the earlier plants shown, as with many crosses in their infancy, only gave faint indications of the beauties presented when the plant attains to mature age. A twin-flowered and two single-flowered inflorescences, sent by Reginald Young, Esq., Fringilla, Linnet Lane, Sefton Park, Liverpool (gr., Mr. Poyntz), which were taken from a plant bearing nine blooms, afford full evidence of its beauty. The flowers are larger than usual by reason of the vigour of the plant. The dorsal sepal is white, flushed and veined with purplish-rose, and from the small green blotch at the base a dark purple line extends up the centre. The other parts of the flower are of the ordinary type, but the lower sepals are more highly developed in consequence of the strength of the plant.

CATLEYA LABIATA.

Mr. Rolfe has unearthed from the Edinburgh *Philosophical Journal*, i., pp. 367 *et seq.*, an account of Swainson's stay in Pernambuco in 1816.

Larix sibirica of Ledebour, which is found in the Altai Mountains; and *Larix dahurica* of Fischer, Regel, and Willkomm, which occurs in northern, eastern, and south-eastern Siberia, and of which a variety, *Larix kurilensis* of Mayr, is found in north Japan and the Kurile Islands. Kent, in Veitch's *Manual of Conifera*, gives no exact information by which these may be distinguished, neither does he state their supposed limits of distribution, and I am inclined to think that they will be found to run into each other.

Probably the one spoken of by Mayr in Freeland is the variety found in north-east Russia, which Loudon says was imported in 1806 by the Duke of Atholl, and proved a failure at Dunkeld. On enquiring recently about it from the Duke's very able forester, Mr. Keir, I found that it has died out or been forgotten. Some years ago I was very anxious to see the Siberian Larch tried, in the hope that it might prove less liable to the attacks of *Peziza Willkommii*, which have ruined so many plantations, especially since 1879, and suggested to

Cattleya labiata is not expressly mentioned, but mention is made of various "parasitic" plants sent to Dr. Hooker and Mr. Cattley. The latter gentlemen sent a flowering-plant to Lindley, who called it *Cattleya labiata*. Mr. Rolfe's account will be found in the December number of the *Orchid Review*.

ONCIDIUM PHYMATOCYLUM.

A spray of this elegant Orchid, sent by Mr. H. J. Chalwin, Superintendent, Municipal Gardens, indicates that the culture of plants at Cape Town has not been abandoned during war's alarms. The curiously arranged primrose coloured flowers, spotted with brown, have narrow segments, the side ones reflexed so that the large branched sprays of flowers resemble a flight of insects.

Orchids are good travellers, and that is one reason why their culture is so widely practised. The plant in this case came from Central America to England, and from here to Cape Town, where it seems to flourish remarkably well.

ORCHIDS AT ROSSLYN, STAMFORD HILL.

THE excellent collection of Orchids belonging to H. T. Pitt, Esq., affords a capital example of successful cultivation carried on in the London district, and goes far to prove that, with proper management, Orchids grown in towns may equal those in the open country. In the Rosslyn collection, in the matter of some of the species of which it is said that no one can grow them satisfactorily, Mr. Pitt might point with pride to several subjects coming under that class, and especially to that section of *Zygopetalum* including *Bolleas*, *Pescatoreas*, and *Batemannias*, of which he has a fine lot in the most vigorous condition, the fine specimens bearing broad, green foliage rising above masses of fleshy, healthy roots. The plants all produce their large, showy flowers in profusion, and thus the class which has been generally vexatious to others is here one of the most satisfactory.

The same may be said of the collection of *Phalænopsis*, whose beautiful fleshy leaves and numerous flower-spikes leave nothing to be desired. It is noteworthy that these *Phalænopsis* and some fine batches of *Dendrobium formosum*, still with many in flower; *D. atro-violaceum* furnished with numerous spikes, *D. Phalænopsis*, some new hybrid *Cypripediums* raised on the place, and other reputedly difficult plants are growing in the most luxuriant manner in an old Pine-pit, in the bed of which grand specimens of *Eucharis* are coming into flower; the *Phalænopsis* and other Orchids being suspended overhead. Similar arrangements we have frequently noted where plants generally considered difficult to grow have been practically growing themselves.

The *Odontoglossums* are in splendid condition, the larger specimens in the new range especially, and that the flowering is not sacrificed to the making of large bulbs is evidenced by those in flower having grand blooms. Among them are many unique hybrids and spotted forms of *O. crispum*, of which the fine *O. crispum Pittianum* is, perhaps, the best. Among those in bloom were a splendid white form of *O. crispum* with a very prettily marked lip, and a grand *O. × Ruckerianum*, with flowers nearly as large as an ordinary *O. crispum*; and overhead are suspended the lesser *Masdevallias* and other species.

Mr. Pitt is a great lover of pretty and rare Orchids of compact growth and singular flowers, and in most of the houses some of those very interesting things are to be found. Among them are a very curious Madagascan *Angræcum*, with fleshy compressed leaves and white flowers; the rare *Oncidium Retemeyerianum*, with leaves like those of *O. Lanceanum*, and long spikes of curious beetle-like flowers; some pretty *Promenæas*, *P. xanthina*, having many bright yellow flowers; *Bulbophyllum barbigerrum*, *B. Dayanum*, and other singular *Bulbophyllums*; and *Cirropetalums*, *Ceologyne*

odoratissima, like a miniature *C. cristata*; *Nanodes Medusæ*, and *N. Matthewsii*; *Chondrorhynchus*, of which one is said to be a new species; the pretty *Dendrobium Madonæ* with pure white flowers, the margins of the lip marked with rose colour; good plants of the scarlet *Lælia monophylla*, and a large number of things of a similar nature, all of which are well looked after—for Mr. Thurgood, the gardener at Rosslyn, takes equal interest in all things in his charge, and by his skill and diligence has wrought great improvement.

The warm *Cypripedium*-house has the varieties

in excellent condition, and promising well for bloom. The varieties of *Lælia anceps* are making a good show; and in flower are some fine *L. autumnalis*, one of which might well be called "gigantea."

In one of the warm houses, among scarlet *Anthuriums*, a fine example of *Angræcum sesquipedale* with six flowers, *Cypripedium × Amesianum* with fifteen blooms, and others were in flower. With the before-mentioned finely-grown *Bolleas*, *Pescatoreas*, &c., were a good batch of *Miltonia Roezlii*, and another of *Oncidium Lanceanum*,



JOSEPH PAXTON: ONE OF THE FOUNDERS OF THE
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of *C. × Leeaunum*, *C. Spicerianum*, and a number of hybrids in bloom on the one side, and the *Selenipediums* on the other; a cooler house being filled with a great number of varieties of *C. insigne* in bloom, among them being a fine *C. i. Sanderæ*, and three other clear yellow-flowered *C. insigne*, and a very handsome form of *C. × nitens* with fine, large flowers, the round, flat dorsal sepal of which had fine purple markings running into the white upper half. With them were good *C. × Leeaunum*, *C. × Lathamianum*, &c. The large *Cattleya* and *Lælia*-house was formerly not satisfactory, but raising the staging and altering other arrangements, together with careful management, has overcome the difficulty, and the whole of the plants are now

neither of which usually met with in such good health; also *Cypripedium callosum Sanderæ* and *C. Lawrenceanum Hyeaunum*, overhead being various *Nepenthes*.

In another house in bloom were *Oncidium tigrinum* and other cool-house *Oncidium*s; a fine mass of the charming *O. cheiroporum* having twenty-five elegant sprays of canary-yellow flowers; *Cymbidium Tracyanum*, *C. Lowianum*, and others are about to flower well; the hybrid known as *C. × Armainvilliersianum* having this year seven spikes, or several less than when it was shown at the Royal Horticultural Society last year.

In the deciduous *Dendrobium*-house the *D. Wardianum*, *D. crassinode*, and others are showing

well for bloom; in another the scarlet *Sophronitis* attracts the eye, and the pretty flowers of two very distinct forms of Messrs. Sander's strain of *Epidendrum* × *Endresio* - *Wallisii*, and one of the typical *E. Wallisii*, are attractive.

Needless to say that the raising of hybrid Orchids is also commanding special attention. Some success has been obtained, and the resultant plants are thriving, but as yet both Mr. Pitt and his gardener think that they have yet conquests to make in that field of work.

from cross-fertilised seed of the best varieties which they may possess. They may certainly have many failures, but this should not deter the raiser, it being in the nature of things, for no royal road to success exists; and everyone who tries starts on an equal footing. There are now many really good varieties in all the classes in commerce; indeed, few of the new ones, if any of them, surpass Headley's *George Lightbody* in its class. It may well be selected as the pollen parent of the grey-edged class. A variety raised by myself named

attention to the results obtained from cross-fertilising, we find that no really good varieties can be obtained in this way; and that it was necessary to cross-fertilise the best selfs with each other. The seed will ripen in July, and should be sown at once. Numerous seedlings will appear in two or three weeks, and when these are large enough, they may be pricked out into small flower-pots, a dozen in a 3-inch flower-pot. The best potting soil for *Auriculas* is good yellow loam, with a fourth or third part decayed manure added to it. I also add a little leaf-mould, but only if the loam is heavy. For small plants and offsets some coarse white sand should be added. The potting of the general collection of *Auriculas* should be attended to as soon as flowering is over. In the process of repotting, see that no examples of the *Auricula aphid* (*Trama Auricule*) is left on the roots; this parasite frightened the fanciers greatly some quarter of a century ago, but it does but little injury, nothing like so much as the ordinary green-fly does. This is really a great pest, and should never be allowed to gain a footing in an *Auricula*-frame. It can easily be killed by fumigating, and this is certainly the best way to get rid of it. *J. Douglas*.

ZONAL PELARGONIUMS FOR WINTER FLOWERING.

The uses of the zonal *Pelargonium* are manifold, but perhaps at no other season are their bright colours more appreciated than in the late autumn and winter months. Groups of these plants afford a bright bit of colour when arranged at *Chrysanthemum* shows, adding to their attractiveness; and for home decoration, perhaps no other plant is so bright at this season as the scarlet *Pelargonium*. In this colour none surpasses the old *F. V. Raspail* among the semi-double varieties; while for a single-flowered, *West Brighton Gem* or *Vesuvius* are unbeaten for brightness and freedom of flowering, and where a mass of bloom is required, these varieties are very effective.

In the interesting notes on zonal *Pelargoniums* at *Woodhatch*, on p. 393 of the last volume, where a good selection in colours is given, the varieties appear to be all of the single-flowered section. Where, however, the flowers are required in a cut state, it would be well to include those of a double or semi-double character, some of which produce flowers as freely as those of the single-flowered, and these may be used in a cut state without the trouble of gumming the petals, which is necessary for the singles. The following are good semi-doubles for winter-flowering:—*Hermione*, *F. V. Raspail*, *Aglaia*, *Maggie Hallock*, *Double Jacoby*, *Mrs. Corden*, *Nydia*, *Goldfinder*, *Lord Derby*, *Joyful*, *Fraicheur*, and *Charles Lalande*. Rather than grow a number of varieties, it will be found the best policy to cultivate the requisite quantity of plants in a few distinct colours for winter-flowering, and of these scarlet and white should be the two grown in greatest numbers. The excellent cultural notes given by "A. D.," in the above-mentioned article, are equally applicable to the semi-doubles; and if followed, should produce results quite equal, and in some respects more useful than the single-flowered varieties. *C. H.*

CHRYSANTHEMUMS.

The first point to consider before starting another season's campaign is to revise the list of varieties; for so many varieties are now to be found, and many of these improvements upon older ones, it is useless to cultivate any but the best. Sentiment counts for but little with an exhibitor when competition is so close as it is now-a-days, or when a batch of flowering plants of any particular colour is required in a private garden. All doubtful or inferior varieties should be struck off the list, and better ones included.

Propagation may now proceed apace. Let only strong, vigorous shoots be chosen as cuttings, making them about 3 inches long. Insert the cuttings singly in small, extra deep, narrow pots, of which a goodly number can be placed in a small space. Some persons strike their cuttings in boxes, others



M. J. BERKELEY: ONE OF OUR EARLIEST CONTRIBUTORS.

FLORISTS' FLOWERS.

THE AURICULA.

WHEN I have had an opportunity to write of the *Auricula* I have persistently advocated the raising of seedlings. Most fanciers of the present day will not take pains to raise seedlings; they would rather make up their collections from the industry of those who do, but some of the choicest seedlings that have been exhibited in London in recent years are so slow of increase that it is doubtful if they will ever come into commerce at all. My advice to amateurs is: not to hanker after the productions of other people, but to commence to raise seedlings.

Marmion has proved itself to be an excellent seed-bearer. The pollen cases must be removed when the pips are not nearly open, and before the pollen is scattered. In a well-bred *Auricula*, the stigma is well down in the tube, but it can readily be reached by a small camel's-hair brush, upon which the pollen can be conveyed to the sticky substance on the stigma. In cross-fertilising show *Auriculas* do not intermix the classes, but keep the green by itself as well as the grey, white, and selfs. At one time no trouble was taken to cross-fertilise the best self varieties, for this reason, that in every batch of seedlings from the edged flowers there is a goodly number of selfs; and the fanciers were satisfied to pick out the best of these and introduce them as new varieties; but with our more careful

put several together in 4½-inch pots. The one cutting, one pot system, has an advantage over either, as the plants can be transferred to larger pots with but little disturbance of the roots, and it is now generally recognised that the fewer the checks a *Chrysanthemum* receives, the better its chance of ultimate success. A sandy soil, with a small addition of coarse silver-sand on the top, is a good sort of compost wherewith to fill the propagating-pots. Let the pots be stood in a small frame or in handlights put into a greenhouse or cold pit, no heat being necessary—in fact, it does harm, as a steady, uninterrupted growth the whole season should be the aim of the gardener. Remove the lights for an hour every morning, in order to dissipate moisture, and thus minimise the risk of damping off; and wipe the glass dry in the evening. More air than this will not be necessary until after the roots have formed, when the lights may be tilted a little, increasing the amount of air until at last the plants may safely be afforded full exposure. *E. Molyneux.*

THE WEATHER IN WEST HERTS.

THE closing week of the past year proved warm, wet, and windy. On five days the shade temperature rose above 50°, while the nights were, as a rule, equally warm for the time of year. At 1 foot deep the ground is now about 3° warmer, and at 2 feet deep about 4° warmer than is seasonable. On each day rain fell, the total measurement amounting to 1½ inch. Of this quantity nearly an inch was deposited on the 30th ult., making this the wettest day since the middle of July. Throughout the 28th the wind was very boisterous. Indeed, between noon and midnight the strength of the wind amounted to that of a gale. The highest mean velocity occurred during the hour ending 4 P.M., when twenty-nine miles was recorded—direction W.N.W. Five days were altogether sunless, while the remaining two days were fairly bright. *Daphne Mezereum* came into flower in my garden on December 29, or fifty-eight days earlier than in 1900, forty-three days earlier than in 1899, and thirty-eight days earlier than in 1898.

DECEMBER.

This was the mildest December of which I have here any record, and during the same fifteen years there has been no previous December with so little frost, the greatest cold indicated by the exposed thermometer being 10° below the freezing-point. The nights were, on an average, about 6° warmer, and the days about 7° warmer, than is seasonable. At 1 foot deep the ground was warmer than in any preceding December. At 2 feet deep, however, the temperature was slightly higher in December, 1898. Rain fell on no fewer than twenty-four days, but the total quantity for the month was less than an inch in excess of the average. Although eighteen days were altogether sunless, yet the record of clear sunshine, taking the month as a whole, was about seasonable. The wind was, as a rule, unusually high, and on two occasions stronger gales were experienced than at any time since March, 1896. The prevalence of westerly winds was very great; in fact, for 522 hours, or twenty-two days, the direction was some point between south and west. There were a good many humid days, but, regarding the month as a whole, the average amount of moisture in the air at midday was rather less than the December average.

THE YEAR 1900.

This was another warm year. The only really cold months were March and May, while January, July, November, and December, were all more exceptionally warm than these two were cold. The total rainfall was only about average, and yet this was the wettest year we have had since 1894—showing what a long series of dry years we have recently had. Since the winter-half of the drainage year began in October, the fall of rain has been slightly in excess of the mean for those three months. There have been only four other years during the past fifteen years in which the record of bright sunshine was as good. *E. M., Berkhamsted, January 1, 1901.*

THE WEEK'S WORK.

THE HARDY FRUIT GARDEN.

By C. HERRIN.

Planting Fruit-trees.—Owing to the exceptionally mild weather during the past two months, the work in the hardy fruit-garden is, or should be, in a fairly advanced condition. Fruit-tree planting, pruning, and other work, has been effected under very favourable conditions. Any arrears of planting may still be done while the weather remains open, and the state of the ground permits. Late planting should be avoided as much as possible, but success will depend very much upon the manner in which the work is performed, for a season may still be gained by planting now, instead of deferring it until next autumn. This, of course, refers principally to work in the private garden, and not to operations upon an extensive scale. When planting at this season, the condition of the soil especially must be taken into consideration, and if it be in a rather wet state, a few shovelfuls of dry wood-ashes, potting-bench refuse, and charred refuse, in mixture, should be afforded each tree, which will prevent the necessary treading of the soil producing a water-logged condition about the roots. The fibrous roots should be covered with some of the finer portions of the above mixture, and the main roots laid out horizontally. Give the tree a slight upward and downward shake during the operation, pressing the soil moderately firm around the roots, and finish off by leaving the surface in a slightly rough state. Avoid deep planting; if the stem be covered to the depth of 2 or 3 inches, this will usually be sufficient. Sometimes even trees coming from a nursery may have been too deeply planted, and therefore it is not always safe or wise to plant at the depth the tree has previously been in the ground. After planting, finish off with a mulch of strawy manure. When planting trees against walls, provision must be made for the increase in girth of the stems, which should be at about 6 inches from the foot of the wall. This is very essential in the case of Pear-trees, whose stems often attain to a considerable size; while Apricots, Peaches, and other stone fruit-trees, are liable to canker and gum where a too severe pressure at the point of contact with the wall occurs. Labels of a permanent nature should be at once substituted for those from the nursery. Those with raised letters of the "Acme" or "Stratford" types are reasonable in price, and practically indestructible. It is a very good plan to make a rough sketch of the fruit quarters, and write the names of the trees in the positions they occupy, then if the labels get lost the name of any tree may be easily determined. Where the newly planted trees are of standard, pyramid, or bush form, stakes should be provided for them as soon as possible after planting, and be placed firmly in the ground in a manner that will not injure the roots. Tie the trees securely to the stakes, but rather loosely, until the slight settlement that always occurs in the soil has taken place. The branches of newly planted trees against walls or fences should have the branches gathered together in bundles of three or four, and be tied loosely to the wall with raffia or soft string.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. I. MEARES, Esq., Cambridge Lodge, Floddon Road, Camberwell.

Repotting the Plants.—With the dawn of the New Year the work in the different divisions of the Orchid-houses will need consideration. Every endeavour should be made to forward the potting requirements as far as practicable, for as the days lengthen so will the different species claim attention. There are many species and varieties among the cool and intermediate-growing Orchids which may be attended to without delay. The winter-flowering *Cypripediums*, such as *C. insignis*, *C. Leeanum*, and the numerous species and hybrids that have recently passed out of flower, should be examined, and any repotting that may be required should be attended to. It is not advisable, where the material is in good condition and there is plenty of rooting-space, that these should be annually repotted. The nature of the potting-compost should be governed somewhat by the condition under which the plants have to be cultivated. For instance, a liberal sprinkling of turfy loam may be used among the materials used for potting *C. insignis* and the hybrids derived from it if the collec-

tion exists away from the dull, foggy surroundings of large cities; otherwise the use of loam or other materials liable to become soddened during the winter months should be interdicted, as a compost retentive of moisture causes spotting and disfigurement of the foliage, especially is this the case in and near London. I find that a compost consisting of two parts turfy peat and one part chopped live sphagnum-moss the most suitable under these unfavourable conditions. Where the Orchids exist in truly rural districts, the use of loam is an advantage if finely broken crocks or coarse sand be freely used along with it. All the members of the *C. insignis* section grow and flower satisfactorily if they are placed in an intermediate-house having a temperature of 55°. Apply water copiously to repotted plants, and afford them encouragement to re-establishment in the new materials.

Miltonia vexillaria.—This species thrives under similar conditions to the foregoing, and owing to the mildness of the weather the plants are in an unusually forward condition, and the advancing growth should be watched, for the leaves are apt to adhere to each other, and become malformed and permanently disfigured. These adhering leaves should be separated by passing the fingers between them. The young leaves are also apt to be infested with a yellow-coloured thrips, to destroy which the plants should be fumigated or vaporised at intervals of a fortnight.

The Cattleya-house.—The flower-buds may now be remarked in the sheaths, and in order to encourage progress the plants should be placed where the greatest amount of sunlight can reach them, which will have the effect of developing the colours, and giving substance to the flowers. Place them at the warmer part of the Cattleya-house, so that moisture may be afforded at the root without a check to growth having to be feared during a sudden fall in the outside temperature. The mildness of the season has had the undesirable effect, in some cases, of inducing secondary growth. In the case of *C. Mossiae*, growths have produced sheaths in such a manner that second flowering will occur. During the winter the sheaths of *C. Mossiae* absorb moisture, and assume therefrom a brown tinge, and where this is observed the sheath should be slit to about two-thirds of its length and the moisture allowed to dry up, for if this be not done the flower-buds will decay, the apex of the pseudo-bulb may suffer in consequence, and the plant be lost.

Calogyne cristata.—Where this species is grown at the cooler part of the Cattleya-house, the flower scapes will now be advancing, requiring that the plants be placed well up to the sunlight, and moisture at the roots liberally afforded.

East Indian-house.—Here most of the plants are dormant, although there are many species of *Aerides* which have not properly sealed the points of the roots, as is usual in the winter, and are therefore to a certain degree in a growing state, the lovely *A. Lawrencei* and its nearly allied species *A. Sanderiana* being particularly noticeable in this respect. The *Aerides* have been benefited hitherto by the small amount of fire-heat which has been necessary this season. Plants of *Saccolabium giganteum* and *S. Harrisoni* require a liberal amount of root moisture, and to be placed at the warmer end of the house when developing their flower-racemes.

FRUITS UNDER GLASS.

By MALCOLM MCINTYRE, Gardener to Sir CHAS. TENNANT, The Glen, Innerleithen, Peeblesshire.

Cucumbers.—Plants which have been in bearing and giving a full supply of fruit during the autumn and winter will now show signs of exhaustion, particularly if they have been heavily cropped. It may also be difficult in some cases to maintain the proper degree of bottom-heat. Should this be the case, strong young plants in other compartments should be in readiness for taking their places; and no time should be lost in clearing out the old plants, soil, &c., as a preliminary to a fresh start. The cleansing and preparation of the Cucumber-pit must be most carefully performed, as this plant, to grow it well, requires and enjoys a genial, pure atmosphere, steady top and bottom heat, and an abundance of light. In modern Cucumber-pits the plants may be turned out upon very small hills or ridges of compost, but the better plan, and one which I always recommend at this season, is to grow the plants in pots of 12 or 14 inches in diameter,

and plunge them to the rim in a good bed of sound fermented material, chiefly tree-leaves, after these have been thoroughly fermented and sweetened in the reserve ground. When the violent heat has passed away, they may be introduced to the pit and made firm and compact. The bed should not be less than 2½ to 3 feet deep. In order to prevent the pots from sinking, each one should have a small pillar of dry bricks placed underneath it before the heating material is introduced; the bed can then be turned and renovated at will. The warm vapour constantly rising from the bed of leaves counteracts the drying influence of fire-heat. When the plants have formed the first rough leaf they may be put into the pots, which need not be more than three-quarters filled with compost, as the stems will stand and are the better for being earthed up. Care must be taken not to have the plants too close to the hot-water pipes, as there is danger of them being damaged by the dry heat and scalding steam. Careless syringing soon destroys the stem-leaves. In cases where planting close to the pipes cannot be avoided, place boards between the hot-water pipes and the plants. Plants coming into full bearing must be carefully attended to, as they should afford a good supply of Cucumbers till those newly planted come in to take their places. The principal points here are cleanliness of the structure, including frequent cleansing of the glass, and a steady bottom-heat of 80° from fermenting material. As soon as the roots show themselves, top dress them with thin layers of rich compost, and continue this treatment whenever the roots in quantity appear at the surface of the soil. If thinly planted, there will be abundance of room for the young growths and leaves, which must not be allowed to touch the glass. Syringing may now be discontinued, and atmospheric moisture afforded by damping the walls and paths with pure warm water and the surface of the bed with diluted soot-water. The best way to provide the latter is by partly filling a bag with soot, and sinking it in a tank of rain-water. Keep the evaporating-pans regularly charged. Husband the strength of the plants by light cropping and cutting the fruits whilst young. By the turn of the year they will require copious supplies of clear, tepid liquid; they ought then to continue in full bearing for a lengthened period. Insects, as a matter of course, will put in an appearance. The worst of these pests is red-spider; and no quarter should be allowed them for a single day. The best and only remedy for red-spider is moisture applied to the leaves. By careful fumigating with "XL All" vaporising fumigator, if taken in time, this pest can be kept in check.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HUSSEY PARK, Esq., J.P., Prestwold Hall, Loughborough.

The Stove.—One of the most important conditions for the successful cultivation of plants under glass is light, then come heat and moisture. The recent copious rains everywhere will have washed the roofs of all glasshouses clean on the outside, and an effort should be made when the men cannot work out-of-doors to wash all glass on the inside of the houses, so that sunlight may not be obstructed. When cleansing the interior, make the woodwork and walls scrupulously clean, and thus destroy numerous insect pests. A temperature of 65° at night, and 70° during the day will be sufficiently high for the present month. Should stormy or severe weather prevail, these figures may be reduced 5°. Great care must be exercised in the application of moisture at this season. A slight syringing in the early morning, and again at not later than 2 P.M., will suffice, if the paths are damped down the last thing at night. The gardeners who have charge of the stoves should study the needs of every plant in the matter of water afforded at the roots, and above all things avoid applying water in dribbles. Some activity is maintained in a greater or less degree by all plants which retain their foliage in the winter, such as Codium, Ixoras, Gardenias, &c., and such plants must never become absolutely dry at the root, or they will be much damaged. When needful, apply water in quantity sufficient to penetrate the ball of earth, and apply no more till the soil again becomes dryish. Allamandas, Bougainvilleas, Clerodendrons, and Rondeletias which have already been pruned will be the better for being placed in a temperature of 5° lower than the bulk of the stove plants until signs of growth are visible, no water being afforded. Gardenias with developing flower-buds should be assisted by an occasional application of diluted liquid-manure.

Chrysanthemums.—The cuttings inserted during the past month are forming roots, and care must be exercised in removing decaying foliage and cuttings which have damped off. If damping off is at all common, the frame should be aired for an hour or longer, and the lights removed when growth becomes active. This stage may be readily ascertained by turning out a few potsful of the most forward cuttings. As soon as the rooting of the cuttings is general, place them on a shelf close to the glass in the greenhouse. Any plants which are slow in forming shoots should be placed in a Peach-house orinery that is closed for forcing, stirring the surface of the soil, and applying a sprinkling of artificial manure.

THE FLOWER GARDEN.

By T. H. SLADE, Gardener to Lord POLTMORE, Poltmore Park, Exeter.

Renovating and Planting.—Where these operations are necessary, and are not as yet carried out, there is still time to do at the least some portion of the work before the busy time begins. Any rearrangement it may be desired to make should be well thought out before a commencement is made. The work being carried out in sections, as time may permit, by having some definite plan the work will be more readily completed. In old gardens there are too many Laurels and other common shrubs, which were planted in great numbers for the sake, perhaps, of immediate effect, and have not been removed in anything like the required number, and now is the right season to root them out, so as to bring prominent trees and shrubs into view, open out peeps, &c., and thus give an idea of greater extent to a place. Laurels, unless they have some definite object to hide, or are grown as a hedge or screen, soon crowd out other and perhaps better plants. Such clearance work affords an opportunity to plant, for the sake of change and variety, more deciduous flowering subjects and choice evergreens. If the hardness of some new shrub is in a matter of doubt, plant it sparingly at first, as that which will thrive in one part of the country may not do so in other parts. If the shrubberies are bounded by grass, the original formation may be adhered to, or sometimes a more pleasing effect may be carried out by altering curves, and affording different effects by cutting out or planting. Patches of the variegated form of Periwinkle, with Japanese Maples placed over it, have a pretty effect, while Golden Privet judiciously planted gives fine colouring all the year round.

Newly Planted Shrubs.—These should be securely staked, and in the case of specimens of any great height, a soft band should be placed loosely around the stem, to which three wires should be fastened, and then secured to three stumps driven deep into the ground triangle-wise—a very secure method. Small shrubs of less than 6 feet in height may simply be provided with one stout stake, but if heavy headed three may be needed. In planting make the soil firm, but leave the surface loose and fairly fine, so that moisture will pass freely into it, and prevent the frost from entering very deeply. A crumbly soil does not crack under the harsh winds of March. This applies more to heavy or retentive soils than to light ones, but it is beneficial even to those.

Old Stumps and Partly Decayed Trees.—In carrying out alterations, there may be some of these which may be utilised to support creepers, such as Vitis Coignetiae, V. flexuosa major, and Polygonum Baldschuanicum, a plant which bears a profusion of white flowers during the summer, while the Vitis affords rich leaf colouring in the autumn. All three plants are deciduous. Roses good for this purpose are Crimson Rambler, Dawson, and Alister Stella Gray; the last named a plant of vigorous growth, and flowering profusely during the summer and into late autumn, and moreover sweetly scented, is one of the best. These Roses are almost evergreen.

Pruning and Trimming of Shrubs.—Evergreens that have to be kept to a certain size and shape should be trimmed accordingly, but in regard to evergreens and flowering deciduous shrubs growing naturally, their season of flowering must be considered, also the age of the wood upon which the flowers are produced. If on the old wood, thinning out may be necessary, so that the flowers may be better observed; but if on the young wood, the object of the pruner should be the production of long shoots.

Routine Work.—Sweep and roll lawns; collect tree-leaves and rubbish, and if the former are not wanted burn them, the ashes coming in usefully for dressing borders, and scattering on the turf. Sweep and roll walks, and pay particular attention to tidiness generally, there being little to see in the flower-garden as yet.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bicton, East Budleigh, Devonshire.

General work.—With the advent of the new year, work in this department becomes more pressing every day, and all vacant ground that has not yet been dug should be dug as soon as possible, working in plenty of well-decayed manure for such crops as Broccoli, Brussel Sprouts, Turnips, and Onions, double digging, or bastard-trenching as it is sometimes called, if time will permit; if not, one good spit of 9 or 10 inches in depth will bury the manure, but for the Onion crop I always double dig, burying the manure between the first and second spit, and laying up the ground in ridges, this being a much better plan than leaving it flat, especially if the soil be tenacious, the soil working down in much better condition in the spring after being pulverised by frost, sun, and wind. Peas and Beans not needing nitrogenous manure, the land which will be occupied by these crops should be dressed with muriate of potash, or if manure be used, it may consist rather of leaf-mould, decayed rubbish of the kitchen garden, &c. The sites for the crops of Carrots, Parsnips, Beet, Scorzonera, Salsafy, &c., should have carried a crop where manure had previously been dug in, a slight dressing of soot or wood-ashes being now afforded. When they follow Celery the results are generally very satisfactory.

Seakale.—When it is the practice to lift the roots annually for forcing, there should be no delay in lifting them, taking care that the roots be not bruised by the fork or spade. Lay them thickly together in a sheltered corner, and cover with soil to the depth of 6 inches, with a little loose litter over all if frost sets in. The thongs, as the small roots are called, should be removed and prepared for sets, employing the straightest pieces, making them 5 inches long, cutting the top end straight across and the bottom one slanting, tying them in bundles of fifty, and placing the bundles in sand or soil out-of-doors until planting time arrives in March. The Seakale plot should be deeply forked over when in a workable state, picking out every bit of root that can be seen, and after lying fallow for a week or two, manure and dig it in readiness for Potatoes, Beans, Broccoli, &c. Remove all fallen and decaying leaves and roots from all crops of the Cabbage tribe at short intervals; push on with draining or path-making; and roll walks frequently.

Forcing.—Place the required number of Seakale crowns in the Mushroom-house or other dark place every ten days, or if forced in the open, cover a fresh batch of plants every third week, using freshly raked up tree-leaves in preference to much stable-manure, as too a gentle heat is required.

Asparagus can be easily brought on now. Nothing, to my mind, beats the old hot-bed of freshly collected Oak, Beech, or Chestnut leaves, or all three together, leaving about 2 feet round the frame for holding a lining when that becomes necessary. No roots under three years old should be forced. A layer of leaf-soil 3 inches thick should be placed on the bed for the clumps to rest upon, and the latter should be packed fairly close together, and covered with sifted leaf-soil 4 inches deep, a space of 6 to 8 inches being left from the glass. Let the frames be matted closely at night, afford a little air for an hour or two daily when growth is well advanced, but little or no water for some time. A batch of roots may be introduced once in three weeks. As soon as the produce from one frame is exhausted, clear out the roots, fork up the bed to the depth of 18 inches, add a little fresh material, when it will be in readiness for a fresh start.

Potatoes and Carrots.—Make up hot-beds for these to be planted and sown about the middle of the month; if the latter were sown in November, carefully ventilate the frames, and close them early in the afternoon, with a slight dawning overhead.

Mustard and Cress.—Sow in pans or boxes of rich soil every ten days, pressing the seed into the soil, and keep them in the dark until germinated; then afford full light, and a temperature of 60°.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, JAN. 8. { National Dahlia Society. Annual Meeting at Hotel Windsor, 2 P.M.

SALES.

MONDAY, JAN. 7.—Dutch Bulbs, Hardy Border Plants, Perennials, Azaleas, Roses, &c., at Protheroe & Morris' Rooms.

WEDNESDAY, JAN. 9.—Dutch Bulbs, American Blackberries, Azaleas, Palms, &c., at Protheroe & Morris' Rooms.

FRIDAY, JAN. 11.—Dutch Bulbs, Hardy Plants from Continent, Hydrangeas, Azaleas, Hollyhocks, Blackberries, Imported and Established Orchids, &c., at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—36° 3'.

ACTUAL TEMPERATURES:—

LONDON.—January 2 (6 P.M.): Max. 45°; Min. 37°.

January 3—dull, foggy, slight frost last night.

PROVINCES.—January 2 (6 P.M.): Max. 48°, Cornwall; Min., 41°, North-east Scotland.

1801: Before and After.

It is but ten years since we were celebrating the Jubilee of the *Gardeners' Chronicle*. On that occasion we took the opportunity to review the state of horticulture in 1841, and its subsequent progress.

That summary, brief and necessarily incomplete, nevertheless attracted attention, not only at home, but abroad; for the reason probably that people are so immersed in their daily work, that, until some special occasion renders it necessary, they have not time to look back upon the stepping stones by means of which they have attained their present position.

Another decade has past. We are called on to celebrate what is called a Diamond Jubilee. What is more, we are entering upon a new century. Thanks to our supporters, the *Gardeners' Chronicle* is stronger than ever; its circulation has more than trebled, and we hope that these indications may mean that it is recognised that we have fulfilled our promises, and that our efforts for the promotion of horticulture have not been unsuccessful. What measure of success we may have attained is due pre-eminently to our contributors, to whom we tender our heartfelt thanks.

The Calendars tell us this is the beginning of a new centennial. The nineteenth has gone, the twentieth has taken its place. The same documents told us recently that winter had commenced. The high temperatures we have experienced, and are still subjected to, seem to show that the Calendars are out in their reckoning; the fact is, of course, that the

beginning of a century like the beginning of a new year, is a mere arbitrary expression devised for convenience sake, and nothing else. Perhaps at such a time, be it artificial or be it natural, we ought rather to look forward than backward. To do this, however, would necessitate the gift of prophecy. The extraordinary advances during the last half century make the work of forecasting one of no ordinary difficulty. Will that advance continue progressive, or will it be arrested by circumstances? No one can tell. It is more practical then, as a preparation for the future, to look back over the ground we have traversed, than to indulge in theoretical speculations, however tempting they may be, as to what the future may have in store for us.

WHEN DID THE CENTURY BEGIN?

The year 1801, they say, marked the beginning of the last century. So far as horticulture is concerned, this is misleading. The great renaissance did not begin till more nearly the middle of the period in question. The beginning of the century, horticulturally, dates from the general introduction of hot-water heating in 1828, which rendered the protection of plants in winter easier, more certain, and less cumbrous, from some such event as the abolition of the window tax in 1845, which rendered glass cheap, or from the subsequent removal of the imposts on timber and bricks.

We give an illustration (fig. 6) of the way in which one of the houses in the Botanic Garden, Oxford, was heated in the early days of the past

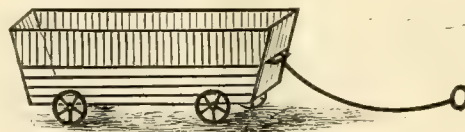


FIG. 6.—A METHOD OF HEATING GLASS-HOUSES, ONCE EMPLOYED AT THE OXFORD BOTANICAL GARDENS.

century. It was simply a brasier on wheels, and the duty of the gardener was to move this primitive furnace from one spot in the house to another, so as to ensure that the freezing-point should not be attained.

The year 1801, with its immediate predecessors and its successors till after 1815, constitutes one of the most wretched periods in British history. There were glorious incidents, no doubt, which still thrill our hearts, and without which, indeed, we should not be in our present prosperous condition. But at that time war, and worse than rumours of war, reduced whole sections of our population to poverty and misery. Taxation was enormous; prices were exorbitant. NAPOLEON boycotted our commerce. Our forefathers lived in daily dread of invasion. Popular education was virtually non-existent; the majority of the poorer classes could neither read nor write. No wonder that sullen, and in some instances, active discontent prevailed among the people. This state of things existed till some years after the long war was brought to an end at Waterloo in 1815. The Newspaper Duty was not reduced till 1836, and ten more years elapsed before the Corn Laws were removed and Free Trade introduced. The duty on paper was not abolished till 1867. The conditions were obviously not favourable for the development of the peaceful arts. Nevertheless, there were some who kept the flame burning even in those distressful times. Gardening then was almost exclusively

the pastime of the well-to-do, and the pursuit of the botanist. Gardening for the million has sprung up in our own times.

FAMOUS HORTICULTURISTS.

Even in the midst of the horrors of hateful war, international courtesies were not left wholly in abeyance; and such was the influence of Sir JOSEPH BANKS, that British men of science were protected, and collections of natural history were respected at his instigation, whilst he himself was elected a member of the Institute of France. BANKS, whose portrait hangs in the Council Room of the Royal Horticultural Society, did not publish much in his own name, but his influence for good was remarkable. It was he who introduced the China Rose in 1789. The Moutan Paeony made its appearance from the same source in the same year. Hydrangea Hortensia came ten years later. But the introductions effected by BANKS, or through his agency, are too numerous to be detailed here.

The DUKE OF PORTLAND is credited with the introduction of the purple Magnolia in 1790, whilst the lovely Yulan M. conspicua was brought under notice by Sir ABRAHAM HUME in 1801. The first purple Chrysanthemum, as it was called, flowered in COLVILLE'S nursery at Chelsea, in 1795. Camellias and Cape Heaths were coming at that time in abundance. Nearly eighty species or varieties of the last-named were recorded at WILLIAMS' nursery at Turnham Green, a much larger number than could now be supplied by any existing nursery.

MASSON was the first collector sent out from Kew. He visited the Cape in 1786–1795, and sent home numerous succulent and other plants.

JAMES LEE, who died in 1795, was the founder of the once famous Hammersmith nurseries. He was a correspondent of LINNÆUS, and secured a more enduring title to remembrance as the introducer of the Fuchsia.

LEWIS KENNEDY (LEE & KENNEDY), was a contributor to horticultural literature at the end of the eighteenth, and the beginning of the nineteenth centuries. Much of the text of ANDREW'S *Repository* is attributed to him.

The Linnean Society was founded in 1788. One of the original founders was a nurseryman, JAMES DICKSON, who also took part in the subsequent establishment of the Horticultural Society of London in 1804. His portrait hangs in the Council-room of the last-named Society.

UVEDALE PRICE, RICHARD PAYNE KNIGHT, brother of THOMAS ANDREW, and REPTON, were writing and practising landscape gardening at this time. FORSYTH produced his *Treatise* on the diseases of fruit-trees in 1791, and MADDOCK his *Florists' Directory* in 1792. HAWORTH issued a *Treatise on Mesembryanthemum* in 1794; and one of THOMAS ANDREW KNIGHT'S earliest productions, that on the culture of the Apple and Pear, appeared in 1797.

JOHN ABERCROMBIE wrote his *Universal Gardener* in 1783, a work published in the name of THOMAS MOORE, but now forgotten.

THE BOTANICAL MAGAZINE.

In 1801 there were no horticultural newspapers, but the *Botanical Magazine*, whose history was given in our columns by Mr. HEMSLEY on the occasion of its centenary in 1887, was established by WILLIAM CURTIS in 1787. The earlier volumes were nearly exclusively devoted to hardy plants, commencing with *Iris persica*. On plate 13 the first greenhouse plant *Coronilla glauca* is figured. Ten plates further on, a *Stapelia* is illustrated, followed by *Passiflora coerulea*, and *Mignonette*. *Cyclamen*

latifolium (persicum) appears at tab. 44, and is calculated to astonish our modern Cyclamen growers, and delight students of evolution. The Sweet Pea appears on plate 60. *Cineraria cruenta*, the stock whence our modern *Cinerarias* have been evolved, was figured in 1797. The preface to the third volume mentions many "novel and curious plants," introduced from the Cape of Good Hope. It may be expected that history will repeat itself in some measure, and that other novel and curious plants will find their way here from the Transvaal, and other parts of South Africa. Let us hope they will be appreciated as well as their predecessors were by our forefathers, but we fear that the number of genuine plant-lovers has not increased proportionately to the number of gardeners.

In 1804 the Horticultural Society of London was founded. We need not follow its varied fortunes, which are pretty well known to our readers by frequent mention of them in these columns. Enough for us to recall the honoured name of THOMAS ANDREW KNIGHT, whose career, moreover, is sketched in the Christmas Number of the *Gardeners' Magazine*.

LOUDON, a most industrious compiler, whose *Arboretum* is still of invaluable assistance, was farming in Oxfordshire in 1809.

PROGRESSIVE DEVELOPMENT.

We need not pursue this branch of our subject further, as it is dealt with in other articles in our present issue. Our primary intention is to deal with the earlier years of the century only; but a few salient points in the middle and end of that period may be at any rate mentioned. We need not trespass on the province of the lay press further than to indicate as signs of progress a few leading particulars which have rendered the nineteenth century, and especially the latter half of it, so remarkable. Population has increased by twenty-four millions; the accessions to our Empire have been truly enormous, beyond the dreams of our predecessors; our trade in a recent year was over eight hundred and fourteen millions. Steam, railways, telegraphs, telephones, electric light, wireless telegraphy, spectrum-analysis, which enables us to prove the constitution of the stars; Röntgen rays, which render opacity translucent; photography, anaesthetics, the liquefaction of gases, the antiseptic treatment of wounds, and sanitary measures generally. These are only a few of the discoveries and applications of science during the century. We owe them, to mention only a few, to such men as VOLTA, DAVY, FARADAY, LYELL, HERBERT SPENCER, MURCHISON, DARWIN, WALLACE, TYNDALL, HUXLEY, OWEN, DEWAR, RAMSAY, LORD KELVIN, PASTEUR, LISTER. IN our own special department we have KNIGHT, BANKS, SABINE, ROBERT BROWN, the two HOOKERS, LINDLEY, BENTHAM, PAXTON, MARNOCK, and a crowd of others who flourished after the beginning of the century, and whose work is too recent to need particular mention here.

CHISWICK.

The gardens at Chiswick, now so greatly shorn of their original proportions, were established in 1822. Here LINDLEY laid the foundation of his fame as a horticulturist, and was associated with BENTHAM, PAXTON, ROBERT THOMPSON the pomologist, GEORGE GORDON, and others. It was in the first quarter of the century, and a few years after, that DOUGLAS astonished the world by his numerous discoveries and introductions to Chiswick.

Kew.

Kew Gardens were thrown open to the public in 1841. Subsequently the Palm-house was built, the museums established, and the whole establishment remodelled and extended under the care of Sir WILLIAM HOOKER, aided by his lieutenant, JOHN SMITH, *primus*. Of their subsequent progress under Sir JOSEPH HOOKER and Sir WILLIAM THISELTON DYER, we need say nothing on this occasion.

THE GARDENERS' CHRONICLE.

In the same year the *Gardeners' Chronicle* was founded by the exertions of LINDLEY, aided by PAXTON, the late Sir WENTWORTH DILKE, and Mr. W. BRADBURY. Our Jubilee Number for January 3, 1891, contained a full account of the history of the *Chronicle*, and of the condition of horticulture at that time. To that number we refer the reader for further details.

In 1851 the first great International Exhibition was held in Hyde Park, under the auspices of the Prince Consort, whose death in 1862 threw the whole nation into grief and mourning. The Crystal Palace was erected after PAXTON's plans, and on the close of the Exhibition was transferred to Sydenham.

NEW INTRODUCTIONS.

We have no intention in this place to go into detail concerning the introduction of new plants during the latter half of the century; but even in so cursory a review as this, we must not forget the Sikkim Rhododendrons introduced by Dr., now Sir JOSEPH HOOKER, in 1850; nor the Pines and other plants sent us from Japan and China, by ROBERT FORTUNE and Mr. J. GOULD VEITCH.

The importations of Orchids have been on a gigantic scale, and the benefit to horticulture has been shared by the botanists. The exotic Orchids known to LINNÆUS might be counted on the fingers; now they are enumerated by the thousand.

If we except Orchids, we may say, as a general rule, that the era of collections is over for the present; even the great nurserymen do not now grow miscellaneous collections to the same extent as formerly. They cultivate specialties, and not only that, but there is a tendency for the nurserymen to become plant-merchants only, and to purchase what they require from market-growers and specialists.

HYBRIDISATION.

Hybridisation and cross-breeding, so carefully practised by Dean HERBERT, in 1821, and subsequently, enrich our gardens at the present epoch to a greater extent than does the importation of new species. It is an aim now to improve what we have already, rather than to add to our stores. This is not an unmixed advantage, but we cannot alter the trend of fashion if we would. The bedding-out system, introduced early in the century, and culminating soon after its middle in extravagant absurdity, has been very greatly modified for the better.

MARKET-GARDENING, &c.

Market-gardening has developed enormously, the quantities of Grapes, Tomatos, Cucumbers, and of flowers grown for house decoration, would astonish our predecessors could they witness them. While agriculture has been depressed, gardening has flourished; but the great advance has been in the last quarter of a century. Equally remarkable is the enormous increase in the importation of vegetable products from abroad during the same period.

The Gardeners' Benevolent Institution, which

has afforded so much benefit to distressed gardeners, was not founded till 1838. The Gardeners' Orphan Fund, another most useful charity, was established to commemorate the Jubilee of our QUEEN, in 1887.

The year 1866 witnessed an International Exhibition and a Botanical Congress at South Kensington, which have not been surpassed since. The permanent results of that effort were the donation of one thousand pounds to the Gardeners' Royal Benevolent Institution, the purchase of the Lindley Library, the publication of an important Report—a valuable historical document—and, indirectly at least, the establishment of the Scientific Committee.

BOTANY.

Of the progress of botany we have no intention to speak in detail, it must suffice to remind the reader that LINNÆUS died in January, 1778, age seventy years seven months and seven days. AUGUSTIN PYRAMUS DE CANDOLLE, the father of ALPHONSE, and grandfather of CASIMIR, was born in the same year. A. L. DE JUSSIEU was born a few years earlier. To these two men, DE CANDOLLE and JUSSIEU, aided by LINDLEY in later times, we owe the substitution of the natural for the artificial system of LINNÆUS. In the earlier years of the century, and well on towards its middle, the contest raged, but the result has been the firm establishment of the natural system. It has been confirmed by the speculations of DARWIN, who, by encyclopædic accumulation of facts, and by his own classic researches, has supplied a rational basis to the systems of classification, and shown how genealogical descent furnishes the clue to the arrangement of plants and animals in a natural manner.

Just after the middle of the century, HERBERT SPENCER, DARWIN, and WALLACE overthrew the old notion of the immutability of species, laid down the principles of evolution, and created such a revolution in all departments of natural knowledge that if the question be raised who has had the greatest influence on the progress of knowledge throughout the world during the century, there can be but one answer—CHARLES DARWIN.

About the same period, or soon after, our eyes began to be opened as to the nature and influence of Bacteria and other lowly organisms as potent for good or ill as they are minute and innumerable. There seems good reason to believe that the gardeners of the future will have to realise their profound importance, even in the details of cultivation.

Heredity, variation, and adaptation, the so-called natural selection, are shown to be the main factors in the evolution of plants as we now see them, and these silent processes will continue in the future. These are things of cardinal importance now-a-days, and they concern all branches of knowledge in all countries, but they were scarcely thought of in 1801.

In spite of the clouds that just now hang over the country, this brief retrospect, which might easily have been largely extended, shows that we have ample grounds for thankfulness, and equally sound reasons for hopeful anticipations in the future.

UPON reference to our Almanac for 1901, which is presented with each copy of this issue of the *Gardeners' Chronicle*, it will be seen that the year which has so recently commenced is likely to be one of continued activity in the world of

horticulture. The Royal Horticultural Society will hold its first meeting at the Drill Hall on January 15, and from that date until December the Committees will meet fortnightly, excepting on occasions when fixed public holidays or other circumstances necessitate the postponement of a meeting. The exhibition in the Temple Gardens will be held as usual, and so will the popular Fruit Show at the Crystal Palace, which, it should be noticed, is to take place about ten days later than heretofore. We are not aware that any special visit has been arranged by this Society to horticultural exhibitions in the provinces, but a special feature of the year's work will be an exhibition and Conference upon Lilies, in the historic gardens at Chiswick, on July 16 and 17. Such an exhibition cannot fail to present an unusually beautiful display, nor is the conference likely to be less interesting than those that have already taken place in the same gardens, and which have proved to be of such great value to horticulturists. The Society's annual examination of gardeners will be held on April 24.

The "special" societies will also be busy. The National Rose Society will hold three exhibitions, one at the Crystal Palace, one at Ulverston, and one at Richmond, Surrey, where, it will be remembered, a visit was made by the Royal Horticultural Society last summer.

The National Chrysanthemum Society has again made arrangements to hold three exhibitions, one in each of the months October, November, and December, and there appears every indication that Chrysanthemum exhibitions will be just as numerous in the first year of the twentieth as they have been during the closing years of the nineteenth century. It is a striking testimony to the popularity of this flower, and to its value, that November, usually the most dreary month of the year, is now the one when horticultural exhibitions are the most numerous.

The Carnation and Picotee, the Auricula and Primula, the National Dahlia, Manchester Orchid, National Viola, and a few smaller societies will all survive in the new century, but the dates upon which the exhibitions of some of these will be held will be determined by the character of the weather during the spring months.

The Royal Botanic Society has not yet arranged the dates for the exhibitions to be held in the gardens at Regent's Park, but those on which meetings will take place are indicated in the Almanac.

Thanks to the courtesy of our correspondents, we are able to publish the dates of exhibitions of some of the principal provincial horticultural societies, as those at Edinburgh, Shrewsbury, York, Wolverhampton, Leeds, Newcastle-on-Tyne, Belfast, Cardiff, &c., but in a few instances the appointments for the year have not yet been made. Thus the Birmingham Botanical and Horticultural Society send particulars of a show of Daffodils to be held by the Midland Daffodil Society in mid-April, a show of Tulips by the Royal National Tulip Society at the end of the month of May, and the Midland Carnation and Picotee Society's show at the end of the month of July. The Liverpool Horticultural Association will hold a Chrysanthemum show on some date in November, in addition to the spring show mentioned in the Almanac. The Harrogate Chrysanthemum Society has not yet chosen a date, and the Sheffield Chrysanthemum Society has yet to select a date in the second week of November. The Tavistock Cottage Garden Society mentions

the second week in August as the probable date of its annual exhibition.

The Gardeners' Royal Benevolent Institution has fixed January 22 for its annual general meeting and election of pensioners, and May 22 for the sixty-second Anniversary Festival Dinner at the Hôtel Métropole, when the Right Hon. Lord LLANGATTOCK will preside.

The annual meeting of the supporters of the Royal Gardeners' Orphan Fund will take place on February 15, and the Festival Dinner on May 7, at the Hotel Cecil, the Hon. W. F. D. SMITH, M.P., presiding. The annual meeting of the United Horticultural Benefit and Provident Society will be held at the Caledonian Hotel, Adelphi, on March 11. Such a list of appointments is sufficient to prove that there is abundance of life and energy in those whose business or hobby is that of gardening.

DATURA ARBOREA (Supplementary Illustration).—One of our Supplementary Illustrations this week shows a well flowered example of *Datura arborea*, better known in gardens under the name of *Brugmansia candida*, from the gardens of Major J. W. DENT, Ribston Hall, Wetherby. The corolla of the flower, which is about 7 inches in length, is white. The leaves elliptic-oblong, entire, and are, as well as the petioles and branches, covered with a powdery pubescence. The plant will grow to a height of 10 or 12 feet when planted in good soil, as is apparent in the case of the specimen figured. The species, like the gaudily flowered *D. sanguinea*, is a native of Peru, and therefore amenable to greenhouse treatment in this country. *Daturas* of the shrubby section are of easy cultivation, only requiring a moderately rich, porous, loamy soil, and to be well supplied with water and manure-water whilst growing; and kept dry at the root and cool during late autumn and winter. For small greenhouses it is best to grow them in pots, then when in flower they may be stood in half shady spots out-of-doors, or removed to a house with a north aspect, in which positions they remain for a long time in flower. In the case of the plant at Ribston, it is planted out in a border, and the branches allowed to ramble on an overhead trellis. The shrubby species require, in most positions in which they are employed in gardens, to be severely spurred in, or they become of very unwieldy dimensions. The pruning may be carried out towards the end of winter, unless very severe, when late autumn is the better season, waiting of course till the soil has become dry. We are indebted to the courtesy of Mr. J. McCLELLAND, the gardener at Ribston Hall, for the opportunity of figuring the plant.

MR. WILLIAM HERBERT DUNNETT, a partner in the well known seed house of Messrs. JAMES CARTER & Co., of High Holborn, London, died at his residence, Stourhouse, Dedham, Essex, on Saturday last, in his seventy-fourth year. Mr. DUNNETT had ceased to take any active share in the management of the London business for many years. He was a large landowner in the Vale of Dedham. He leaves a widow, one son, and two daughters.

THE ROYAL HORTICULTURAL SOCIETY.—The new charter empowers the Society to appoint a certain number of gentlemen who have rendered distinguished services to horticulture by their scientific researches as honorary members. The Honorary Fellows have no vote and pay no subscription, but in other respects rank practically as Fellows. It is hoped that the scientific committee may be materially strengthened by this reversion to a former practice, and that its meetings may be more numerous attended by those interested in scientific horticulture.

"REVUE DE L'HORTICULTURE BELGE."—In accordance with its usual promptness, this journal appeared on our table on the first day of the

first month of a new century. Naturally a tone of sadness pervades its opening pages, for has not the *Revue* had to bear in the last year the death of two of its founders and its editors, H. J. VAN HULLE and EDWARD PYNNAERT? The private life and the public career of these two men afford the best guarantee that every effort will be made to emulate their example in the future.

"L'ARGUS HORTICOLE."—This is a year-book containing alphabetical lists of French horticulturists, amateur and professional, horticultural societies, and a list of dealers and growers of specialties. Thus under the letter "D" will be found an alphabetical enumeration of the principal growers of Dahlias in France. The publisher is M. PAUL PIGELET, 8, Rue St. Etienne, Orleans.

THE ROYAL GARDENERS' ORPHAN FUND.—The Hon. W. F. D. SMITH, M.P., has kindly consented to preside at the next annual festival of this Institution, which will take place at the Hotel Cecil, on Tuesday, May 7.

THE QUEEN VICTORIA CLERGY FUND has received from "Agricola, Kent," a cheque for £25 as a thank-offering in recognition of his firm having attained chief place among the nurseries devoted to fruit and tree culture. The anonymous owner says his object is to offer the first cheque drawn in the new century for the benefit of the Church generally.

THE "REVUE HORTICOLE" appears this month in a new dress—a size larger than sufficed for the nineteenth century. An interesting historical preface is attached to the number, to which we shall allude at greater length shortly.

KEW.—A correspondent of *Meehans' Monthly* says:—"We," i.e., the denizens of Philadelphia, "could easily beat Kew all to pieces." Would it not be kinder to give it a helping hand if it wants it so badly? Commenting on this letter, the Editor says it would be difficult in any American city to beat Kew simply as a botanic garden. "As a mere public garden it would not be difficult to outmatch Kew." We hope Kew may never be a mere public garden!

TEXAS.—Mr. W. L. MOORE, Pilot Point, Denton Co., Texas, obligingly sends us a profusion of newspaper cuttings relating to horticulture in Texas, and some other states of the Union. They serve to show how widely spread commercial horticulture has become, but the climatal and other conditions are different from our own; and the demand on our space forbids us from using any but a small proportion of the extracts so obligingly sent.

ORANGES.—Numerous varieties are figured and described in the November number of the *Queensland Agricultural Journal*. The article serves to furnish an idea of the importance of the cultivation of varieties of Citrus in this division of the Australian continent.

"THE ORCHID REVIEW."—From and after January 1, 1901, the price for the monthly issue of this useful publication will be reduced to 6d. This is of itself a sign of the spread of the love of Orchids.

BLUE SNOWDROPS.—See recent inquiry. Probably the flowers of *Scilla sibirica* are intended by this name.

GARDENS AND PARKS OF MYSORE.—We have received the Annual Report on Government Gardens and Parks in Mysore for the year 1899—1900. We learn therefrom that the number of visitors admitted was larger than in the previous year, and that the plantations generally are doing well. Experiments were tried with fibre plants, rubber plants, and shade trees; but an unequal distribution of rainfall caused gardening operations in general to be carried out under unfavourable circumstances.

CLEISTOGAMOUS FLOWERS.—M. LECLERC DU SABLON states that in the closed flowers of the sweet Violet, *Viola odorata*, the pollen-grains germinate while still within the anther; the pollen tubes creep along the inside of the wall of the anther until they reach a tissue of small cells in its upper part. These act in a manner comparable to the conducting tissue of the style and stigma; their abundant food-material attracts the pollen-tubes which perforate the wall of the anther at this point and thus reach the stigma, which is exactly on a level with this part of the anther.

vicinity of Paris thousands of acres are devoted to market gardening. In that locality intensive farming has reached such a pitch that a good deal of the soil is made to order; and by the terms of his lease the tenant sometimes carries the soil away with him, just as he does his hot-bed frames, water-pipes, and machinery. The suburban farmer usually begins with old forcing-beds as a basis for his soil, but may make the foundation of sawdust and shavings, or any material that will furnish in time vegetable mould, and fertilisers are added with great liberality. On this combination he

chief growers. The Exhibition authorities are to communicate with foreign and colonial Governments desirous of taking part in special fruit shows, the impression being that such exhibitions would be appreciated by visitors, and prove beneficial to exhibitors. *H. A. Hedley, General Manager, 36, St. Vincent Place, Glasgow.*

FLOWERS IN SEASON.—We have been favoured by Messrs. CUNNINGHAM, FRASER & Co., of Comely Bank Nurseries, Edinburgh, with a flowering shoot of *Luculia Pinceana*, the produce of a small plant growing in a 5-inch pot. This variety seldom flowers with them, and they do not remember having ever seen so large a truss before, it having usually only two or three pips at most; but this one had a dozen or more. *L. gratissima* flowers very freely both planted out and in pots, but *L. Pinceana*, although treated identically, has usually been considered by them as a useless variety.

FRUIT BOTTLING APPARATUS.—Messrs. LEE & Co., of 10, Knightrider Street, Maidstone, draw our attention to an "economic steam cooker, milk steriliser, and fruit bottling apparatus," which would seem well adapted for the uses for which it is intended, and is not specially difficult to manage. The food is contained in hermetically sealed bottles, and submitted to a high temperature, being thus prepared either for immediate use or for storing for an indefinite period. By an ingenious addition the "cooker" can be used as a bronchitis-kettle, so that if not required for one purpose, it can be requisitioned for another.

"GODALMING AND ITS SURROUNDINGS."—By T. FRANCIS HAMILTON, illustrated by GORDON HOME and G. WEST. (St. Bride's Press, 24, Bride Lane, Fleet Street, E.C.) This is another (No. 14) of the Homeland Association's Handbooks, to which we have before been able to refer favourably. It begins with a map and ends with an index, as every guide-book should do, and between these limits are chapters devoted to the town in the past and present, and to the "numerous villages scattered over the lovely wooded valleys which range themselves about Godalming." The letter-press, as usual now-a-days, includes hints useful for cyclists; while the pictures, both of town and country, will charm every appreciative person who may handle the book.

BOOKS OF REFERENCE.—We have received through the courtesy of the publisher, J. HEYWOOD, Deansgate and Ridgefold, Manchester, and 29 & 30, Shoe Lane, London, E.C., a list of periodicals, newspapers, magazines, with their days of publication; also postal information, almanac, &c., for 1901.

BERMUDA BUTTERCUP.—An enquiry was recently made as to the correct name of this plant. We find from a communication to the *Journal of Horticulture* that a variety of *Oxalis* is so called. Precisely—not a Buttercup, and having nothing to do with Bermuda. No wonder people like popular names!

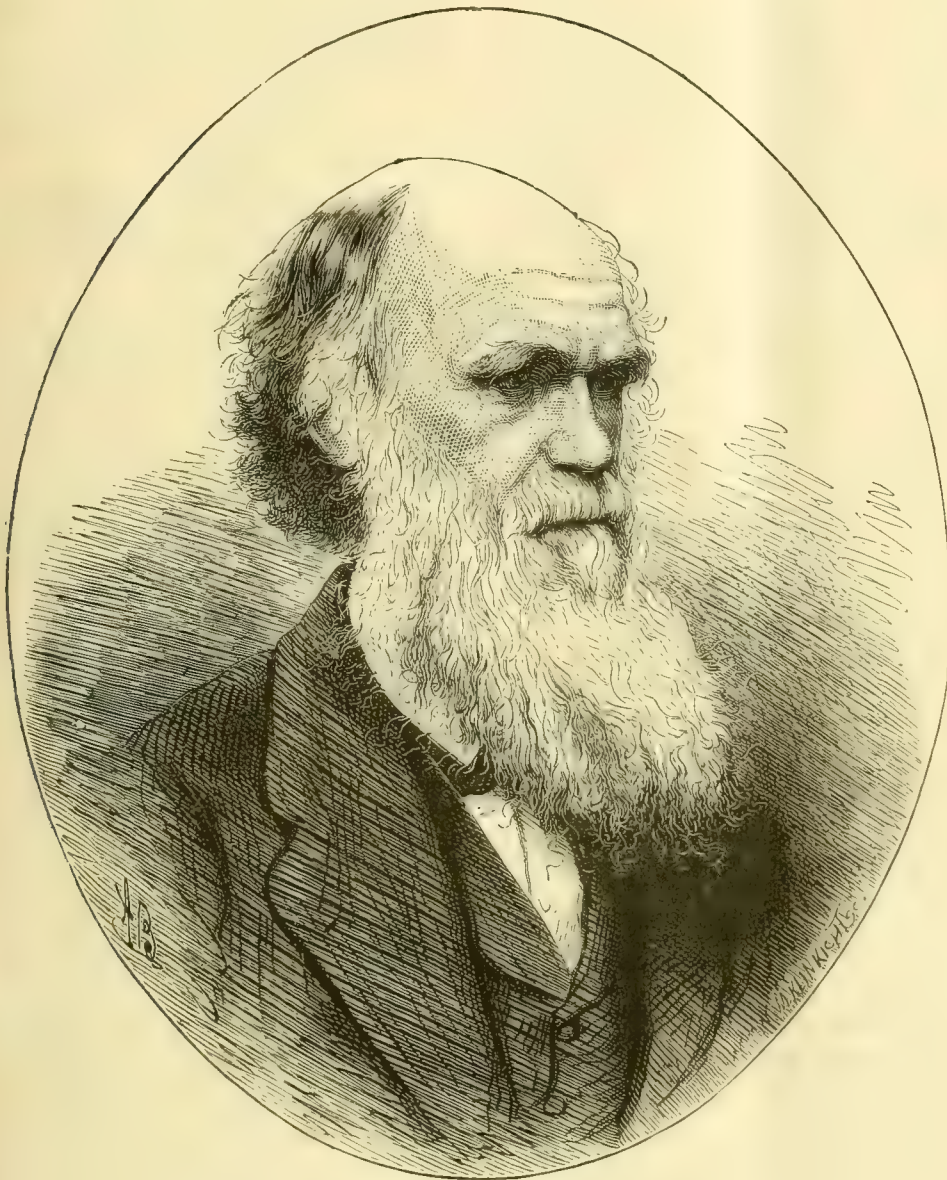
CHARLES DICKENS AND LITTLE NELL.—In the number of *Meehan's Monthly* for December is an illustration of a statue erected in Fairmount Park, Philadelphia. DICKENS is represented as seated, while LITTLE NELL, standing at the base of the pedestal, looks wistfully up at him.

PUBLICATIONS RECEIVED.—*All About Sweet Peas*, by Mr. Robert Sydenham: a descriptive list of Sweet Peas, containing also a simple list, together with annotations showing the number of times each variety was exhibited at the Bicentenary Exhibition held at the Crystal Palace last autumn; how often each variety appeared in all the prize stands, and how many times each variety was shown at the leading provincial exhibitions.

PLANT PORTRAITS.

PEAR DR. LUCIUS, *Bulletin d'Arboriculture*, &c., December. Turbinate, yellow, flushed with red; should be gathered early and ripened in fruit room. Flesh melting, juicy, sugary perfumed. A good market Pear.

ROSE PROF. SCHMITT, H.P., very regular petals, scarcely recurved, dull crimson. *Moniteur d'Horticulture*, December.



CHARLES DARWIN: ONE OF OUR EARLIEST CONTRIBUTORS.

Similar phenomena are presented by *Viola canina* and other kinds of Violet. In *Oxalis Acetosella* the conducting tissue of the anther extends along the whole length of the pollen sacs on the side facing the stigma. In *Linaria spuria* the cleistogamic flowers are not so sharply differentiated, passing by insensible gradations into those of normal structure. The pollen grains do not germinate while still within the anther. *Pharmaceutical Journal*.

GROWING VEGETABLES FOR PARIS MARKETS.

—A good many visitors to the Paris Exhibition remarked the magnificent specimens of vegetables displayed. Mr. J. McKAY says that in the

grows vegetables in the open air to the value of £200 per acre, and pays immense rents—sometimes as high as £32 per acre. At Cherbourg much of the land has been regained from the sea, and upon this land some 15,000 tons of vegetables are produced and sent to the British markets. On the peninsula of Roscoff, in Brittany, is the unique sight of 26 miles of market gardens in a straight line. *Agricultural Gazette of New South Wales*.

GLASGOW INTERNATIONAL EXHIBITION, 1901.

—A flower show on a big scale is to be held towards the end of August, and will be followed early in September by a fruit show, valuable prizes being offered at both, so as to ensure the support of the

ORCHIDS ONE-HUNDRED YEARS AGO.

THERE is no branch of horticulture that has made more progress than the cultivation of Orchids. The limited means of transit from foreign parts, combined with unsuitable glass-houses and heating for their cultivation, prevented the introduction of the plants; and the lack of knowledge among gardeners led to the destruction of the few species that were introduced previously to the year 1801. It may be of interest to readers, who have not access to early horticultural and botanical works, to place on record a few of the facts as to the then means of cultivation of the few species that had been introduced to our gardens up to that date.

In the *Gardeners' Chronicle*, March 19, 1887, p. 381, Mr. W. B. Hemsley writes:—"A dried specimen of *Bletia verecunda* was sent to Peter Collinson in 1731, from Providence Island, one of the Bahamas; but the tuber appearing to have life in it, he sent it to the garden of a gentleman named Wager, where it was placed in a hot bed and grew and flowered in the following summer. This was probably the first tropical Orchid cultivated in England."

One of the best of the American hardy *Cypripediums*, *C. spectabile*, according to *Hortus Kewensis*, was in cultivation previously to 1731. According to the same work *Vanilla aromatica* was next introduced in 1739. In 1759 *Cypripedium parviflorum* was introduced. In the year 1768, Miller's *Dictionary of Gardening*, 2nd edition, appeared, wherein several species of *Epidendrum* were enumerated, some of which may possibly have been known to him under cultivation, for he states "The plants cannot by any art yet known, be cultivated in the ground; though could they be brought to thrive, many of them produce very fine flowers of uncommon form." Messrs. J. Veitch in their *Manual of Orchidaceous Plants*, pl. 10, page 109, record that Dr. John Fothergill brought home from China in 1778, for the first time, *Phaius grandifolius* and *Cymbidium ensifolium*. The first named flowered shortly afterwards in the stove of his niece, Mrs. Hird, at Apperley Bridge, Yorkshire.

The following year, 1788, brings the more interesting and practical commencement of Orchid culture. The first Orchid figured in the *Botanical Magazine*, vol. iv., plate 116, was *Linidorum tuberosum*, the following particulars being appended by William Curtis:—"For this plant I am indebted to the laudable exertions of a late gardener of mine, James Smith, who in the spring of the year 1788, examining the bog earth brought over with some plants of *Dionæa Muscipula*, found several tooth-like, knobby roots, which, being placed in pots of some earth and plunged in a tan pit having a gentle heat, produced plants, two of which flowered the following summer. From the strongest of these the figure was taken." From this circumstance we learn that the species is a native of South Carolina, and a bog plant growing together with *Dionæa Muscipula*, and he also states that he has been assured that the true *L. tuberosum* of Linnaeus came from the West Indies and required stove treatment, but from their own experience the species appeared to be scarcely hardy enough for the open border, but not tender enough to require a stove. The tan pit spoken of was built in the open garden, and was for the purpose of raising plants from seeds by gentle heat and securing others from cold in winter.

The second Orchid figured in the *Botanical Magazine*, p. 572, vol. v., as *Epidendrum cochleatum*, proved afterwards to be *E. fragrans* (see

Botanical Magazine, p. 572, vol. xvi., where the true *E. cochleatum* is also figured). The particulars given in *Botanical Magazine*, vol. v., indicate the fact that Orchids were believed to be parasites, like the Mistletoe. It is stated that the plants drew their support from other living plants; also that Commodore Gardener, in 1789, presented to the Apothecaries Company some roots of the plant which flowered in their garden at Chelsea in 1791, the plants being potted in a compost consisting of rotten wood and decayed leaves, and plunged in a tan bed of considerable size.

The next Orchid figured is *Cypripedium acaule*, *Botanical Magazine*, vol. vi., p. 192, which is stated to have been figured not so much for beauty as its rarity. In the same volume, p. 216, *C. spectabile* is figured as *C. album*. This species, as previously related, had been known some years previously to 1793. In 1797 appeared the figure of *Epidendrum aloides*, *Botanical Magazine*, vol. xi., p. 387. This plant appears to be *Cymbidium aloefolium*. It had been grown over a flue in a stove and flowered in Messrs. Grimwood & Wykes' nursery at Kensington. In the *Botanical Magazine*, vol. xiii., date December 1st, 1799, *Epidendrum ciliare* is figured, the following particulars and cultural remarks being made: "Of this parasitical tribe the number of species described in the third edition *Sp. Pl. Linn.* 1764, amounts to thirty." In Gmelin's thirteenth edition of the *Syst. Nat. Linn.*, 1791, no fewer than seventy-five species are enumerated, which is a vast accession in so short a period. Most of these are natives of hot climates, and on that account require a stove heat in this country. From their nature also, they require a situation not to be exactly imitated; they are, therefore, regarded as plants very difficult of cultivation, and we are not to be surprised that three species only are enumerated in the *Hortus Kewensis*.

In 1801, *Botanical Magazine*, p. 543, vol. xv., *Epidendrum cucullatum* is figured from a plant which flowered in Mr. Woodford's garden at Vauxhall. This species was in cultivation at Kew in 1794. In *Botanical Magazine*, vol. xvi., p. 572, *Epidendrum cochleatum* appears, which had flowered the previous December in Mr. Woodford's garden. In 1801 Miller had become so disheartened with the difficulties presented by Orchid cultivation, that he had thought it unnecessary to enumerate the species in his *Dictionary*, observing that they were not by any art then known to be cultivated in the ground. Those who have laboured under the impression that not more than a dozen varieties were in cultivation previously to the dawn of the eighteenth century will, I have no doubt, be surprised to find the following, amongst others, recorded with their date of introduction in *Hortus Kewensis*, vol. v., 2nd edition, many of which had undoubtedly been in cultivation, viz., *Bletia Tankervilleana*, 1778, *Cypripedium parviflorum*, 1759, *C. humile*, 1775, *C. pubescens*, 1790, *Cymbidium ensifolium*, 1780, *C. aloefolium*, 1789, *C. sinense*, 1793, *C. præmorsum*, 1800, *Oncidium altissimum*, 1793, *O. carthaginense*, 1791, *O. triquetrum*, 1793, *Broughtonia sanguinea*, 1793, *Ischilus linearis*, 1791, *Ornithidium coccineum*, 1790, *Stelis ophioglossoides*, 1791, *Pleurothallis ruscifolia*, 1791, *Octomeria graminifolia*, 1793, *Epidendrum fuscum*, 1790, *E. secundum*, 1793, *E. umbellatum*, 1793, *E. nutans*, 1793, *E. elongatum*, 1798, *Satyrium carneum*, 1787, *S. cucullatum*, 1787, *Aërides odoratum*, introduced by Sir J. Banks, in 1800, and also by the same worthy knight, *Dendrobium speciosum* from Australia in 1801.

We who have benefited by the experience of the past, are still somewhat beset by difficulties in the cultivation of Orchids. Even with the better appliances at our disposal, better information than has been procurable previously, and quicker transit from their native habitat, we frequently fail to obtain satisfactory results from our labours. While hybrid Orchids in general may be grown satisfactorily, there are many of the species, even those which have been used, as the parents which fail utterly under cultivation. Many difficulties have been, however, overcome in the past, and this alone should be sufficient encouragement to cultivators of Orchids to persevere, and thus make the record of their labours of interest to orchidists a hundred years hence. *H. J. Chapman.*

DAUGHTERS OF THE YEAR. DECEMBER.

What should we speak of

When we are old as you? When we shall hear
The rain and wind beat dark December, how
In this our pinching cave shall we discourse
The freezing hours away?

So queries Arviragus, in *Cymbeline*, of his reputed father; and I have heard gardeners, in language less Shakspearian, say the same. December holds to them among the deep-bosomed daughters of the year, the place contemptuously assigned to her deficient little sister by the Bride in Solomon's Song; it is not, they say, reminiscent, as was November, nor anticipatory, as will be January—like the blank page in our Bibles between the Old Testament and New, it parts the floral seasons but belongs to neither.

I do not echo this lament; in the bitterest December I find much to admire and enjoy. I love to watch the bare tree-boughs against a clear frosty sky: Chestnut stiff and straight with blunt terminal knobs, Sycamore and Poplar more closely latticed, brown pendent keys of Ash, frond-like fibres of the Beech, Pear a thick net-work of short knotted stumps, a Robinia cleanly cut and symmetrically arranged as in a diagram, Elm, from its numberless axillary shoots, prettiest and most feathery of all, spread out as children spread on paper the leaves of fresh, wet seaweed. I love to hear the winter thrush, roosting at night in thickest boscage of my neighbour's ample shrubbery, flying up with sunrise to the topmost bough of the tallest tree, and warbling all day long. I like to see the Yuccas, overlooked amid summer foliage, conspicuous now with formidable whorls of bright green bayonets; the Holly, less pyramidal and less thickly berried here than in my old Warwickshire home, to which year after year came grosbeaks, ferreting from the grass the fallen fruits and cracking the hard kernels in their powerful bills; the Mistletoe, of which, in an old Apple-tree, I have a fine cluster ten years old. That, too, is uncommon in this bleak sea-washed county, common enough in southern England, where I have seen it on its rarer nidus of Lime, Willow, Sycamore, Acacia. The wild Iris stands up amidst its prostrate withered sisters with persistent glossy leaves, and the great Hartstongue in the hardy Fern-bed laughs at frost; while Santolina, cut back in early spring, now makes silvery spreading bushes.

Unless in exceptional winters *Laurustinus* shows its broad white cymes, and his year ate Holly blooms still linger not yet fruited. In my entomological days I used to catch upon them after dusk large moths, so drunken with

narcotic honey that they fell helpless into the collecting-box. It is always pleasant to stroll amongst the winter borders, snug, neat, secure, beneath their coat of rotten dung, brightened here and there by undemolished patches of Francoa, Acanthus, Heuchera, Iberis, and Periwinkle. This year I have all these and more. Jasminum nudiflorum quite hides a south-west wall; the Gum and Florentine Cistus, though their blooms struggle in vain to form, retain their ample foliage; small mountain Pansies are

ingly sings—there are still the warm interiors of conservatory, or of plant-decked sitting-room. "Who loves a garden loves a greenhouse too," says Cowper; and December is its triumphant time. Not that he owned a greenhouse; his was a mere summer-house, with somewhat large window, and no heat; you may see it in his Olney garden as he left it a century ago, a movable plank in the floor still disclosing the recess in which that cheery, mellow divine, the Rev. William Bull, kept his tobacco-pipes.

wall with Tacsonia, or Abutilon, or Clianthus, or Ivy-leaved Pelargonium. However, I am without it; the time and money it would demand go to the hardy garden, and for some tender plants I find a sitting-room is an efficient substitute. My library is esteemed a show-place in the neighbourhood; it is not large, about 17 feet square, but unusually lofty, and with an ample bay window. Around the walls are old oak book-cases, and near the window a really magnificent table with Dutch carvings of scripture subjects, mixed curiously, as is their fashion, with uncouth Malay deities. It bears a set of handsome silver writing implements, a testimonial from younger, more active days; and on a cabinet of minerals and fossils is a hundred guinea microscope, the gift of old pupils. But its specialty is in its plants. Between table and window rise a dozen Ferns, nursed by years of care into stupendous dimensions. Above them hangs a Maltese Bombola, hidden by the Maidenhair which springs from it; and in the window beyond are Grevilleas, Dracenas, Aspidistras, a single-stemmed Eucalyptus, flanked by a tall Oleander, rising to the ceiling and trained some way along it. In the north bay is a six-gallon tank of fresh water, holding a male and female Vallisneria, which in summer languidly adjust their strange vegetable loves, and shelter through the year arachnids, lively entomotraca, and tiny water-beetles. In this still, removed place I can defy bare trees and winter gloom; the light that falls upon my paper as I write throws ever shadows of some feathery frond—Adiantum, Polystichum, Pteris—as the Daisy threw its star-shaped shadow on the stone at Wordsworth's feet; inspiring fancies Nature-born, and therefore wholesome—fancies of

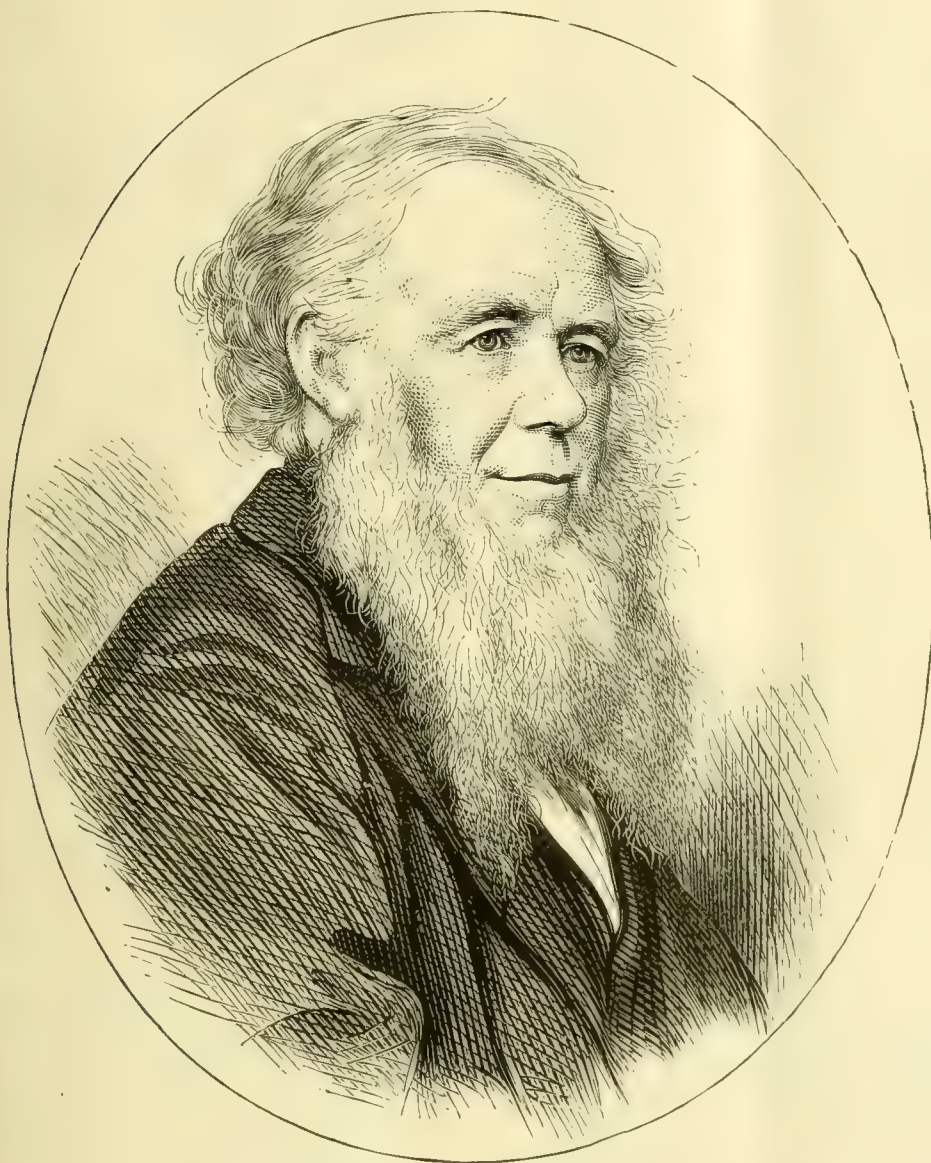
Health, and love, and mirth,
As fits the holy Christmas birth,

says Thackeray in his exquisite Epilogue, which it is our home custom always to read aloud before the family gathering on Christmas night, rarely without a tear or two from one or other of the listeners. Let it suggest a concluding thought for this midwinter Idyll. December is the Christmas month: that, if nothing else, should redeem it from disparagement. "Our uncomely parts have more abundant comeliness;" one alone in the long procession of the year's daughters wears a radiant, sacred aureole, and that is—Dark December! *Corycius senec* (Lincolnshire).

NEW INVENTIONS.

THE "PATTISSON" HORSE-BOOT.

WE have been favoured by Mr. H. Pattisson, of 55, Killieser Avenue, Streatham Hill, London, S.W., with a specimen of his horse-boot, for putting on a horse working on turf, as in mowing lawns and golf links. The boots are provided with a thick double sole of leather, firmly rivetted together, and on the top of this a semi-circular curving-over piece of steel to receive the toe of the horse's iron shoe, and another steel bar with a thin edge to catch in between the iron shoe and the hoof at the heel, this bar being pushed home and kept in place by a short screw provided with a square head. The boot is easily put on, and cannot get out of shape, even in the wettest weather. Mr. Pattisson's circular shows an arrangement by which unshod hoofs can be fitted with these soles, viz., by an arrangement of leathern straps surrounding the hoof. This fastening may be adopted for shod horses if it be preferred. Both methods appear to be improvements on the style of horse-boot in common use. Presumably the boot is manufactured in a variety of sizes.



PROF. J. O. WESTWOOD: ONE OF OUR EARLIEST CONTRIBUTORS.

showing purple flowers, the Bamboos are at their best, and Arundo Donax is shaken by the frequent winds as was its ancestor on Jordan's banks when all Jerusalem poured out to see and hear the leather-girded Baptist. Nay, on Christmas morning, venturing before breakfast into the soft, moist air, I brought in a handful not only of yellow Jasmine, but of Marguerites, white Carnation, Polyanthus, with two Beauty of Waltham Roses. No! I have no anathemas to bestow upon poor consumptive Keats' "drear-nighted December."

Nay, suppose the worst—the sleety whistle, and the frozen thawings, of which he shudder-

Myrtles he grew there, though not in the coldest weather; the Orange-trees of which he goes on to talk, the Amomum, Geranium ficoides, would all have yielded to the first Buckinghamshire winter. I have no greenhouse, and am too old to build one. Mr. Robinson thinks them needless for a beautiful flower-garden; their smoke deleterious, their cost ill-spent, their chief aim (preservation of bedding-plants) vicious and misguided. And yet one likes through December and January to gather for the lady of one's home a daily buttonhole of Heliotrope and sweet Verbena, to bring in an early Maréchal Niel, to cover a



HOME CORRESPONDENCE.

NEW PEARS.—New varieties of Pears that promise well are Charles Ernest and Le Lectier. The first-named variety is above medium size, of good appearance and flavour; it becomes fit for use after Doyenné du Comice, and may prove a useful variety to follow that fine Pear. Le Lectier ripens later, and fruits of this variety which have been grown on a south wall are now ripe. They are large, of fine flavour, very juicy and sweet, with an aroma partaking somewhat of Bon Chrétien, which I believe is one of the parents. Ripening at Christmas, it will be a welcome addition to the dessert at that season. *T. H. Slade, Poltmore Gardens, Exeter.*

FROSTING SHRUBS.—Your correspondent, "W. C.," will find the following a simple method for "frosting" shrubs:—Put a sufficient quantity of thin clear starch into a pail, into which dip the shrubs, and then apply the "Jack Frost" powder while the foliage is wet; stand in a dry, warm place. It quickly dries, and is then ready for use. We have adopted this plan for years, and consider it the best method we have yet tried. The powder can be obtained at any fancy shop. *Thomas Nutting, gr., Chidwickbury.*

CYMBIDIUM TRACYANUM.—Your correspondent Mr. J. O. Clarke will greatly oblige me and others by kindly affording us his methods of cultivation in regard to this interesting plant, as I have under my care five large plants of a species said to be *Cymbidium Tracyanum*. I bought with some other Orchids many years ago a large plant of *Cymbidium* which I was unable to flower for years. A few years since I split it up into four or five pieces, all of which are now large plants. I have grown them in different houses, and afforded them all sorts of treatment, without yet flowering them. They have all the characteristics of *C. Tracyanum*. I should be glad if anyone who reads this note would give me a few hints in getting *Schomburgkias* to flower well. *John Taylor, gr., Hardwicke Grange, near Shrewsbury.*

THE GLASTONBURY THORN.—Mention is made on p. 460 of the previous vol. of the above precocious variety of the common Hawthorn being now in bloom, and the story of the original tree, said to have sprung from the staff of Joseph of Arimathea on the site of Glastonbury Abbey, is lightly touched on. As mentioned, this tree was credited with the power of so timing its flowering period as to invariably burst into bloom on Christmas Day. Now, old Christmas Day was January 6, and the alteration of the date of this festival to December 25 was received with widespread dissatisfaction, many people refusing to recognise the innovation. Believers in the unerring instinct of the Glastonbury Thorn determined to consult this oracle before finally deciding to accept the change, and towards the close of the year many hundreds, some having travelled long distances, arrived at Glastonbury to await the verdict of the holy Thorn. December 25 came and passed with the buds of the obdurate Thorn still dormant; but on January 6 tradition has it that their snowy petals simultaneously expanded. The answer of the oracle confirmed the minds of waverers, and strengthened the determination of the recalcitrant, many communities, for years after, keeping Christmas Day on January 6 as of yore, instead of on December 25—at least, so the legend tells. *S. W. F.*

ADIANTUM CAPILLUS-VENERIS IMBRICATUM.—In reply to Mr. A. Hemsley's enquiry, they are true bulbils which appear on the sites of the sori in this variety, and also in *A. c.-v. daphnites*, a figure of which latter I sent which was reproduced in your columns a year or two ago. Under close culture little clusters of fronds project from beneath a normal indusium. These spring from fleshy, cellular masses, precisely akin to the soral bulbils

which appear on several plumose varieties of *Athyrium filix-femina*. On the other hand, *imbricatum* undoubtedly produces also at times quite normal sori with perfect sporangia, but those I have seen were on plants grown in a cold house, which goes to confirm my belief that the bulbil formation is largely due to warm and close culture. *Chas. T. Druery.*

SEEDING OF BEGONIA CALEDONIA.—In reference to the production of seeds by *Begonia Gloire de Lorraine*, I may mention that two plants of *Caledonia* in this garden have set three flowers. *W. J. Cripps, gr., Willy Park, Farnham.*

NARCISSUS FLOWERING IN THE OPEN.—When walking through the gardens of Abney House, Bourne End, a few days since, I noticed in one of the herbaceous borders that a bulb of *N. Grand Monarque* had produced fully developed foliage and flowers. *C. Herrin, December 28.*

CLEMATIS SONGARICA.—In reply to the enquiry of "S. W. F.," p. 442, last vol., respecting this species, I beg to state that I have long grown it in the open, away from any protecting hedge or wall. There can be no doubt of its perfect hardiness. With me it forms, in light, shallow soil, a dwarfish bush, scarcely 3 feet high, and its rather small flowers are white, with about four sepals only, but in a loamy soil it would doubtless attain a larger size. To the four other hardy species named, *C. crispata* may be added, an American species, with pale bluish-purple flowers. Nor does this exhaust the list. *W. Thompson, Ipswich.*

LILY OF THE FIELD.—Of *Sternbergia lutea* Nicholson's *Dictionary of Gardening* says:—"This plant is supposed to be the 'Lily of the Field' of Scripture." On p. 474 of the *Gardeners' Chronicle* for December 29, 1900, Mr. Williamson impartially divides the honour between *Anemone fulgens* and *Lilium chalcedonicum*; and no doubt other authorities single out some other beautiful flower as that which "toil not, neither do they spin." One would naturally suppose that the Lily of the Field of Scripture was a white flower; in fact, many country people in Devonshire, and doubtless in other counties, believe *Lilium candidum* to be the subject of the Parable of the Lily. *A. C. B.*

THE RAINFALL AT EASTWELL PARK.—The past few months have been abnormally wet in this part of East Kent, and the amount of rainfall for the year as registered by one of Pillscher's dial rain-gauges, is 26 inches. Yet the springs have scarcely risen much, and the subsoil in many places is quite dry. Summer drought in the last four years is felt seriously, and is felt particularly by large trees, Beeches and Oaks seeming to suffer the most. We have during the past season lost several Oak and Beech trees, and many more are showing signs of premature decay. Of frosts we have had scarcely any, and as evidence of that fact I notice that some plants of Ivy-leaf Pelargoniums, standing in vases on an exposed terrace-wall are growing freely, whilst a few buds of Roses are still lingering on the bushes. *H. Walters, gr., Eastwell Park.*

BEGONIA GLOIRE DE LORRAINE.—In our conservatory there are at the present time (Dec. 27) twenty-four large plants of this showy variety, which were raised from buds, with a leaf attached, last April, and treated like cuttings of *Verbenas*. The plants are now growing in 6-inch pots, and present masses of flowers, measuring 18 inches in diameter. I examined the plants last week for seed-bearing blossoms, and found no fewer than seventeen of these, which I fertilised with pollen taken from other varieties of *Begonias*. These occur almost entirely at the ends of the racemes, and are usually the last of the cluster. Several of my gardener friends have examined the plants, and could verify my statements. *A. Wilson, gr., Spring Bank, Severn Stoke.*

DIAMOND JUBILEE GRAPE.—The discussion which has been taking place on the Diamond Jubilee Grape in the *Gardeners' Chronicle* was very interesting, and to a certain extent amusing, to me. Some writers who, whilst admitting that they have never grown Black Morocco, assert that it is like that variety. Now, I have grown Black Morocco at this place for years, but a few years ago the viney this Vine was growing in had to be renewed, and it was necessary to grub it up. I could never get it of a true black colour, excepting at the point of the berries; and when colouring, the berries were very apt to crack, much more so than those of *Madresfield Court Muscat*. One year the Vine carried

very fine bunches, and I tried all I could to colour the berries thoroughly, using sheets of tin set at such an angle as to reflect the rays of the sun on the bunches, but all to no purpose. Melville's *Champion Muscat* (now seldom seen), a variety which I consider to be one of the best of Grapes in regard to flavour, acts similarly. If these varieties were not called Black, they would be more frequently seen, as both produce fine bunches and large berries. The same complaint cannot be made against *Diamond Jubilee*, which has large bunches and berries, colours early in the season, and is as black as a Sloe under ordinary treatment. It is grown by the Messrs. Buchanan, together with other varieties, in their vineries at Kippen, and judging from that which I saw of it at Kippen, and at most of the shows where it has been exhibited, I should say that there is as much difference between *Diamond Jubilee* and *Black Morocco* as between black and red Currants. *David Murray, Outzean Gardens, Maybole.*

—Your correspondent, writing under the signature of Messrs. D. & W. Buchanan, invites me to quote any rule or instruction of the Fruit Committee of the Royal Horticultural Society, which forbids the making of an award to any fruit. I use this term in preference to restricting it to "Grape," if it resemble any existing variety. I know of none such. But then to have such a rule would be absurd, as it would be practically impossible to make it workable. Really the matter is in the hands of the Committee, a body of experts, some of whom, if not all, are familiar with all the chief or best known fruits in commerce, and can tell at a glance whether the object presented for an award is like or unlike some other similar variety. If it be found that anything new, Grape or other fruit, is so much like some other of similar kind in commerce, that it has no distinguishing feature, in flavour or other excellence, is really no improvement on others like it, then it is held (this is a sort of unwritten law) that it would not be honest to the public to cause such variety to be put into commerce, with the impress of an award from the Committee added. I may add that there are scores of things put before the Committee annually, that are passed over for the reason given. Your correspondents do me too much honour when they state that I was the first publicly to mention that *Diamond Jubilee Grape* was too much like *Black Morocco*. I beg to say that whilst fully aware, as a member of the Committee, of what was agreed to, and also of the letter to that effect written to the firm by the Rev. W. Wilks, yet I did but quote from the Society's *Journal*, which was the original means of publication. I have to repeat, there still remains open the possibility of determining identity or difference by growing both Vines at Chiswick. But if the firm will not send a planting Vine for such trial, I think the Society should obtain one, and thus settle the matter. *A. D.*

SOCIETIES.

BECKENHAM HORTICULTURAL.

DECEMBER 21.—Mr. J. GREGORY, Secretary of the Croydon Horticultural Mutual Improvement Society, gave a popular lecture in the Beckenham Public Hall, entitled, "Walks and Talks in Kew Gardens."

Beginning at Kew Bridge, and entering by the principal gate, he very ably conducted the audience over the grounds and houses, showing upon a screen photographs of views en route, bits of landscape, groups of plants, individual plants of particular interest, together with views of exteriors and interiors of the principal glasshouses. Mr. Gregory is an old "Kewite," who is able to afford much useful and interesting information, more particularly of wild and naturalised plants. All of the slides, besides a large number of photographs placed in the ante-room, were taken by Mr. Gregory. The last slide thrown upon the screen was a reproduction of the emblem of the Gardeners' United Horticultural Benefit and Provident Society, the audience being informed that this Society was one of the best means of self-help afforded to gardeners in the district. The charitable institutions of the Gardeners' Royal Benevolent Institution and the Gardeners' Royal Orphan Fund were also recommended as being worthy of support. At the close, Dr. Stillwell, thanking Mr. Gregory, said how much the Society were indebted to him for such beautiful views, so ably described. Mr. Burge thanked Mr. Gregory for the appropriate allusion to the gardeners' charitable institutions. The next lecture is on January 4, by Mr. W. Taylor, "A Year's Work in a Vinery."

NORTHAMPTONSHIRE HORTICULTURAL.

DECEMBER 22.—The annual general meeting of this Society was held on the above date in the Town Hall, Northampton. The Mayor (Councillor F. G. Adnitt), presided over a large attendance.

The Chairman commented upon the adverse circumstances attending the show last August Bank Holiday, owing to the wretched weather that then prevailed, which resulted in a serious loss to the Society. Although proceedings last year were not successful, he thought it would be a pity to allow it to fall through.

Mr. Cockerill presented the balance-sheet for the year, showing £40 6s. 1d. as representing the amount due from the bank on December 14, 1900, the total receipts being £738 11s. 4d., including subscriptions £28 13s., and special subscriptions £40 17s. The tickets sold amounted to £70 17s. 4d., whilst gate-money amounted to £22 0s. 9d. On the proposition of Councillor F. Perkins, the balance sheet was adopted.

A vote of thanks was accorded Mr. John Cooper, J.P., for the assistance he had rendered the Society in granting the use of his beautiful park at Delapre for the holding of the show. It was decided to again hold the show, the date to be fixed by the committee. The following are the names of officers appointed:—President, the Mayor (Councillor F. G. Adnitt, J.P.); Chairman of Committee, Councillor F. Perkins; Vice-Chairman, Mr. H. Law; Treasurer, Mr. A. Cockerill; Secretary, Mr. J. B. Palmer.

Subscriptions towards a guarantee fund were announced to the amount of £135.

Obituary.

WILLIAM DODDS.—This veteran Dahlia-raiser and exhibitor died recently at his residence at Bristol, at the advanced age of ninety-two, having outlived nearly the whole of those who had personal knowledge of him forty years ago, when in the very heyday of his popularity. Coming south more than half a century ago from his native country, Scotland, he became under-gardener to Colonel Baker at Salisbury, subsequently rising to the position of head gardener, and remained in Colonel Baker's service for a period of thirty years. More than half a century ago the county of Wilts was famous for its activity in improving the Dahlia. The brothers Cove and Squibbs, at Salisbury; Wheeler, at Warminster; Heale, at Calne; with Skillman, at Marlborough, were all noted dealers and exhibitors, and Mr. Dodds, having a desire to raise seedlings, found himself in congenial company, and, assisted by the active interest of his employer, he began to raise seedlings with considerable success, his varieties being sent out by his old friend, John Keynes. Dodd's Mary, a light ground flower tipped with purple, made a great reputation in its day. Not only did Dodds raise seedlings, but he was also a skilful cultivator and exhibitor, giving a good account of himself at Dahlia shows. On the death of Colonel Baker, he went as head gardener to Sir Greville Smythe at Ashton Court, Bristol; but while taking a warm interest in his favourite flower, practically his career as an exhibitor was finished. Dodds remained at Ashton Court for some years, and then went into retirement at Bristol. He made a point of coming to London once a year to attend the annual exhibition of the National Dahlia Society at the Crystal Palace, and acted as a judge until prevented by growing infirmities and deafness. But few remain who had knowledge of him when in the height of his successes as an exhibitor. His death lessens by one the number still living who acted as jurors at the great International Horticultural Exhibition held at South Kensington in 1866. One of his oldest personal friends was Mr. H. Eckford, of Wem, who was for a time under Mr. Dodds when at Colonel Baker's. *R. D.*

J. H. LERMITTE, J.P.—This gentleman died at his residence, Knights, East Finchley, on Christmas Day, at the age of seventy-nine. Thirty years or so ago Mr. Lermite was a frequent exhibitor at the London exhibitions, and one of his specialties was zonal Pelargoniums. Those who have recollections of the great International Horticultural Exhibition and Botanical Congress held in London in 1866, will probably remember the imposing plants of standard zonal Pelargoniums

staged by Mr. Lermite's gardener, Mr. Birse. Variegated leaved Pelargoniums were also shown from Knights on that occasion, and there were good stove and greenhouse plants, &c., also shown from Knights. In the days of the Pelargonium Society, Mr. Lermite's plants were always well to the fore, and generally took leading awards. The reports of flower shows held during the sixties and seventies will show that Mr. Lermite took a fair share of honours.

CHARLES PILCHER.—The death of this once well known Orchid grower is announced. We shall allude to his career as a gardener in our next issue.

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period December 23 to December 29, 1900. Height above sea-level 24 feet.

1900.	DIRECTION OF WIND.	TEMPERATURE OF THE AIR.				TEMPERATURE OF THE SOIL AT 9 A.M.			
		At 9 A.M.		DAY.		At 1-foot deep.		At 2-foot deep.	
		Dry Bulb.	Wet Bulb.	Highest.	Lowest.	Rainfall.	At 1-foot deep.	At 2-foot deep.	LOWEST TEMPERATURE ON GRASS.
DEC. 23	N.N.E.	deg.	deg.	deg.	deg.	ins.	deg.	deg.	deg.
SUN. 23	N.N.E.	33.8	33.3	53.7	0.30	...	42.2	40.3	24.6
MON. 24	W.S.W.	34.2	33.3	50.2	36.1	...	41.8	45.6	27.5
TUES. 25	S.S.W.	49.8	48.8	52.6	34.3	0.08	42.7	45.3	30.0
WED. 26	S.S.W.	48.8	48.0	51.3	47.2	0.15	45.0	45.7	40.6
THU. 27	S.S.E.	49.1	47.1	54.0	41.7	0.07	45.0	45.2	53.0
FRI. 28	S.W.	46.7	41.7	47.2	46.1	0.09	45.9	46.4	40.4
SAT. 29	S.S.W.	37.0	36.9	45.6	36.7	...	43.7	46.4	27.5
MEANS...	...	42.6	41.3	48.3	38.1	0.42	43.8	44.0	31.6

Remarks.—The temperature continues abnormally high for the time of year. The first two days of the week were very foggy, followed by rain on the four succeeding days, and a heavy gale on the 28th.

GENERAL OBSERVATIONS.

The following summary record of the weather throughout the British Islands, for the week ending December 29, is furnished from the Meteorological Office:—

"The weather was cold at first, with fog in many places, but gradually became mild and rainy very generally, and frequently very rough and squally.

"The temperature continued above the mean, the excess ranging from 3° over Ireland to 5° in most parts of Great Britain and to 6° in England, S. The highest of the maxima were registered, in most places, on the 25th, and varied from 59° in England, N.W., and Ireland, N., to 53° in England, E. The maximum at Braemar (55°) is higher than any December reading at that station for at least thirty-five years. The lowest of the minima, which occurred during the earlier days of the week, ranged from 24° in England, E., and the Midland Counties to 32° in Scotland, W., and England, S.W., and to 41° in the Channel Islands.

"The rainfall was slightly less than the mean in the Channel Islands, and just equalled it over Eastern and Southern England, but was more than the normal in all other districts, the fall in most parts of the Kingdom being very heavy.

"The bright sunshine was very little prevalent, and less than the mean in all districts. The percentage of the possible duration ranged from 19 in England, E., to 8 in Scotland, W., to 7 in Scotland, N., and Ireland, N., and to 5 in England, N.E."

GARDENING APPOINTMENTS.

MR. ROBERT GALBRAITH, until recently Foreman in the gardens at Balclutha under Mr. TATE, as Head Gardener to the Hon. HUGH F. ELIOT CORWAR, Barrhill, Ayrshire, entering upon his duties at the new year.

MR. M. DINGWALL, previously Head Gardener for three years at Horsington Manor, Templecombe, Somerset, has been engaged as Head Gardener to the same Gentleman at Horsington Manor, from Messrs. ROBT. VITCH & SON, The Royal Nurseries, Exeter.

MR. FRED JESCO, late of Clough Hall Gardens, as Head Gardener to J. WHITE, Esq., Lawton Hall, near Kidsgrove, Stoke-on-Trent.

MR. J. SWEENEY, late of The Gardens, Leopardstown Park, Stillorgan, as Head Gardener to Mrs. MOORE, Ashton, Phoenix Park, Co. Dublin, in succession to Mr. KEARNS.

MR. GEORGE WHITE, late General Foreman at Arlington Manor Gardens, as Steward and Gardener to H. YATES THOMPSON, Esq., Oving House, Oving, Aylebury.

MR. PHILIP BOLT, sen., an ex-Kewite, for the last twenty four years Head Gardener at Over Hall, Winsford, Cheshire, as Head Gardener and Estate Factor to ROYLAND COURT, Esq., The Manor House, Middlewich, Cheshire.

CATALOGUES RECEIVED.

SEEDS, BULBS, ETC.

KENT & BRYDON, Darlington.
BELL & BIERENSTEDT, Leith, N.B. (Wholesale List).
DAVID W. THOMPSON, 24, Frederick Street, Edinburgh.
ED. WEBB & SONS, Wordsley, Stourbridge, Staffordshire.
T. METHVEN & SONS, 15, Princes Street, and Leith Walk, Edinburgh.

DICKSONS, Limited, Chester.
TOOGOOD & SONS, Southampton.
H. CANNELL & SONS, Swanley, Kent.
CHAS. SHARPE & CO., LTD., Sleaford, Lincolnshire (Wholesale List).

DIXON & SON, The Yorkshire Seed Establishment, Hull.
GEORGE BUNYARD & CO., Royal Nurseries, Maidstone.
WILLIAM RUMSEY, Joyning's Nurseries, Waltham Cross, Herts.

FISHER, SON, & SIBRAY, LTD., Royal Nurseries, Handsworth, near Sheffield.
JOHN FRED & SON, Roupell Park Nurseries, West Norwood, London, S.E.

W. DRUMMOND & SONS, LTD., Dublin and Stirling.
LITTLE & BALLANTYNE, Carlisle.
JOHN FORBES, Buccleuch Nurseries, Hawick, N.B.
HOWDEN & CO., Old Post Office Buildings, Inverness.
DANIELS BROS., Ltd., Norwich.

MARKETS.

COVENT GARDEN, JANUARY 3.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantums, p. doz.	5 0-7 0	Ferns, small, per	
Arbor-vita, var., doz.	6 0-36 0	100	4 0-6 0
Aspidistras, p. doz.	18 0-36 0	Ficus elastica, each	1 6-7 6
— specimen, each	5 0-10 6	Foliage plants, var.,	
Cannas, per dozen	18 0—	each	1 0-5 0
Crotons, per doz.	18 0-30 0	Lily of Valley, each	1 9-3 0
Cyclamen, per doz.	8 0-10 0	Lycopodiums, doz.	8 0-4 0
Dracenas, var., per		Marguerites, per	
dozen	12 0-30 0	dozen	8 0-12 0
— viridis, per doz.	9 0-18 0	Myrtles, per dozen	6 0-9 0
Ericas, var., per doz.	12 0-36 0	Palms, various, ea.	1 0-15 0
Eucynymus, various,		— specimens, each	21 0-63 0
per dozen	6 0-18 0	Pelargonium s., scar-	
Evergreens, var.,		let, per dozen	8 0-12 0
per dozen	4 0-18 0	— Ivyleaf, per doz.	8 0-10 0
Ferns, in variety,		Spiraeas, per dozen...	6 0-12 0
per dozen	4 0-18 0		

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Asparagus "Fern,"		Maidenhair Fern,	
bunch	1 0-2 0	per doz. bunches	4 0-8 0
Carnations, per doz.		Marguerites, p. doz.	
bunches	1 0-2 0	bunches	2 0-4 0
Cattleyas, per dozen	9 0-12 0	Mignonette per doz.	
Eucharis, per dozen	2 0-4 0	bunches	4 0-6 0
Gardenias, per doz.	1 6-2 6	Odontoglossums, per	
Lilium Harrisii, per		dozen	6 0-9 0
dozen bunches	4 0-6 0	Roses, Tea, white,	
Lilium lancifolium		per dozen	1 0-3 0
album, per dozen		— Safrano, per	
bunches	1 6-3 0	dozen	1 0-2 0
Lilium rubrum, per		— Catherine Mer-	
dozen	3 0-5 0	met, per dozen	3 0-6 0
Lilium longiflorum,		Smilax, per bunch	3 0-5 0
per dozen	4 0-6 0	Tuberoseas, per doz.	
Lily of Valley, per		bunches...	0 3-0 6
doz. bunches	6 0-16 0		

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, English,		Grapes, Colmar, B...	0 8-1 3
per bushel...		— Muscat, A., per	
cookers, large	3 6-4 6	lb.	5 0-6 0
various	2 9-4 6	— B., per lb.	1 0-2 0
Cox's, in sieves	5 0—	— Almeira, doz.	
Blenheim, bush.	4 0-7 6	lb.	4 0-5 0
— Nova Scotia,		Lemons, case	7 6-15 0
per barrel	12 0-18 0	Lychees, new, pkt.	1 0—
— Californian, per		Oranges, Navel	12 6-15 0
box	7 0-8 0	— Blood	12 6—
— American New		— Muria, case	6 6—
Town Pippins,		— Tangerine, box	0 8-1 1
in barrels	25 0—	— 200	5 0—
Bananas, bunch	6 0-10 0	— Jaffa, case	8 6—
— loose, per doz.	1 0-1 6	— Valencia	12 0-16 0
Cobnuts, lb.	0 10-1 0	Pears, Californian	
Cranberries, case	12 6—	Winter Nels, case	3 6—
— quart	0 6—	— stewing, case...	2 6—
— Russian kegs	2 0—	— stewing, in box	2 6—
Chestnuts, per bag...	6 0-10 0	— Californian	
— Italian,	17 0-18 0	— Easter	
Custard-Apples, per		case	8 6—
dozen	6 0-12 0	Pines, each	3 0-5 0
Grapes, Alicante,		Sapacuna nuts, lb...	1 8—
per lb.	0 1-1 2	Walnuts, bag	6 0-8 0
— Colmar, A	1 3-1 0	— in bags, bush...	18 0—

VEGETABLES.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe, per doz.	6 0 —	Horseradish, foreign, rcr. bundle	0 9-1 0
— Jerusalem, sieve	1 0-1 3	— loose, per doz.	1 6 —
— Stachys or Chinese, per lb.	0 6 —	Leeks, per dz. bchs.	1 6 —
Asparagus, Spruce, Paris Green, 1 lb.	4 0 —	Lettuces, French Cabbage, doz.	1 0 —
Beans, dwf. Madeira, per bkt.	1 6-2 0	Mint, per doz.	4 0 —
— Ch. Islds. and home, dwf., new, per lb.	2 0 —	Mushrooms, house, per lb.	0 8-0 9
Barb. de Capucine, 0 4 —		Onions, picklers, per sieve	3 0 —
Beans, French, pkts. 0 4 —		— per bag	3 0-4 6
— per lb.	0 4 —	— cases	6 0-7 0
B-stroons, bushel.	1 8-1 6	— English, p. cwt.	4 6-5 0
Beet, per dozen	0 6 —	bag	1 0-1 6
Brussel Sprouts, per sieve	1 0-1 6	Parsley, 12 bunches	1 0-1 6
Cabbage, tally	1 0-2 0	— per sieve	1 0-1 6
— dozen	0 6 —	Parsnips, in cwt.	2 0-2 6
Carrots, each	1 6 —	bags	2 0-2 6
Carrots, 12 bunches	1 6-2 0	Potatoes, per ton	80 0-130 0
— washed, in cwt.	2 0-2 6	— New, per cwt.	16 0-18 0
Cauliflowers, per dz.	1 6-2 0	Radishes, per 12 bunches	1 0 —
— crate	8 0-10 0	Rhubarb, Yorks, doz.	1 0-1 6
— tally	6 0-10 0	Salad, small, punnets, per dozen	1 8 —
Celeriac, per dozen	2 6 —	Savoy, per doz.	0 6-1 0
Celery, doz. bndls.	8 0-14 0	— per tally	2 0-4 0
— unwashed, doz.	8 0-10 0	Sesale, doz. punnets	10 0-12 0
Chicory, per lb.	0 8 —	Shallots, new, p. lb.	0 2 —
Cress, doz. punnets	1 6 —	Spinach, per bushel	1 6-2 0
Cucumbers, doz.	3 0-10 0	Salsafy, bunch	0 4 —
Endive, new French, per dozen	1 9 —	Tomatoes, Canary deeps	2 6-3 0
Garlic, new, lb.	0 2 —	Turnips, per dozen	1 6-2 0
Horseradish, English, bundle	1 6-2 0	— in bags	1 6-2 0
		Turnip tops, bush.	1 0-1 6
		Watercress, p. doz. bunches	0 4-0 6

REMARKS.—Brussels Sprouts and Cucumbers are lower in price; Grapes easier, owing to a large supply; some Grape Fruits are on sale at 2s. 6d. per dozen; Citrons fetch 3s. to 6s. per dozen. As usual after a holiday season trade is depressed.

POTATOES.

Various sorts, 80s. to 100s. per ton; foreign bags, 50 kilo., 3s. to 4s. 6d.; Dunbars Maincrop, 130s.; Up-to-Date, 100s. to 120s. John Bath, 32 & 34, Wellington Street, Covent Garden.

SEEDS.

LONDON: January 2.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that quite a holiday spirit characterised to-day's seed market, and transactions were consequently few and unimportant. There is this week no quotable change in either Grass or Clover seeds, but, as regards the last-named, stocks and also crops are everywhere proving short. The supply of Winter Tares has become reduced to a narrow compass. Full rates, meantime, are asked for Mustard and Rape seed. In both Canary and Hemp seed an advance is noted, on account of dwindling stocks, of 1s. per qr. Blue Peas, Haricot Beans, and Spanish Lentils, move off slowly on former terms.

FRUIT AND VEGETABLES.

LIVERPOOL: January 3.—Wholesale Vegetable Market. Potatoes, per cwt.: Lynn Gray, 3s. 4d. to 3s. 8d.; Bruce, 3s. 6d. to 4s.; Up-to-Date, 3s. 6d. to 4s.; Main Crop, 3s. 8d. to 4s. 0d.; Turnips, 6d. to 8d. per dozen bunches; Swedes, 1s. 2d. to 1s. 4d. per cwt.; Carrots, 6d. to 8d. per dozen bunches, and 2s. 3d. to 3s. per cwt.; Onions, English, 5s. to 6s. 6d. per cwt.; do., foreign, 3s. to 3s. 6d. do.; Parsley, 4d. to 6d. per dozen bunches; Cauliflowers, 1s. 6d. to 3s. per dozen; Cabbages 6d. to 10d. do.; Celery, 8d. to 1s. 6d. per doz. St. John's Potatoes, 1s. 2d. per peck; do., new, 6d. per lb.; Grapes, English, 2s. 0d. to 2s. 6d. per lb.; do., foreign, 6d. do.; Pines, English, 5s. each; Apples, 2d. to 4d. per lb.; Pears, 6d. do.; Tomatoes, 6d. do.; Asparagus, 1s. per bundle; Mushrooms, 1s. 4d. per lb. Birkenhead: Potatoes, 1s. to 1s. 3d. per peck; Cucumbers, 6d. to 1s. each; Grapes, English, 1s. 6d. to 3s. 6d. per lb.; do., foreign, 4d. to 3d. do.; Mushrooms, 1s. to 1s. 6d. do.; Filberts, 10d. per lb.

CORN.

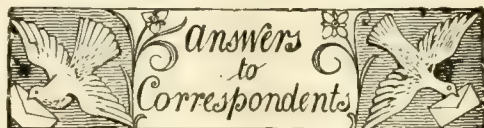
AVERAGE PRICES of British Corn (per imperial qr.), for the week ending December 23, and for the corresponding period of 1899, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1899.	1900.	Difference.
	s. d.	s. d.	s. d.
Wheat	25 9	26 4	+ 0 7
Barley	25 5	25 10	+ 0 5
Oats	16 2	17 2	+ 1 0

TRADE NOTE.

CONIFER SEEDS.—It is, for obvious reasons, not our custom to do more than announce the issue of trade catalogues, but exceptions arise when the goods offered are procured with difficulty, as not being generally in the trade. A list of seeds of rare Conifers and deciduous trees, offered by Mr. Johannes Rafn, of Skovfrøkonteret, Copenhagen, is worth the attention of those interested.

HELIANTHUS PERKEO.—Under the name of Helianthus Perkeo our contemporary, the *Gartenwelt* (December 1, 1900), describes an interesting dwarf form of Helianthus cucumerifolius, that has recently been introduced by the firm of FRIEDRICH RÖMER, of Quedlinburg. The flowers are of the same size as, and do not differ from, those of the true Helianthus cucumerifolius, being of a rich golden colour with black centres. The plants themselves grow to a height of a foot, or thereabouts, and are usually some 18 inches or so in diameter. They are compact, symmetrical, and well "feathered," and the stems are long enough to render the flowers useful for decorative purposes when cut. The plants stand shifting so well that, when required for market, they can be lifted into pots from the open ground without injury when in full bloom. The abundance of the flowers makes them effective for the foreground of groups, and for bedding out. The method of cultivation is of the simplest. The seeds should be sown in March or April, in pots, or on a hot-bed, and the young plants are ready for the open ground at the end of May. In April, the seeds may be sown in the open ground.



FRUIT TREES: D. K. L. To reply in full to your questions would occupy more space than we can afford. Much of that which you wish to know is to be found in our Calendarial articles; but we would advise you to purchase one or two of the small manuals dealing with Apples, Pears, &c., published by Mr. Upcott Gill, Bazaar Office, 170, Strand, W.C.

GRASSES FOR LOW-LYING LAND AT THE SEASIDE: H. G. Poa fertilis, native of Germany, a nutritious species, produces considerable quantities of herbage, and gives a good aftermath; Agrostis palustris, A. canina, A. alba, and A. stolonifera, Festuca elatior, Aira caespitosa, and A. aquatica, Poa aquatica, and Alopecurus geniculatus. Sow in mixture. Dactylis caespitosa (Tussac Grass) is a desirable grass for the sea coast—a saline atmosphere and a peaty soil are conditions necessary for its successful cultivation.

HORTICULTURAL JOURNALS IN THE FRENCH LANGUAGE: J. Meade. Revue Horticole, Moniteur Horticole, Revue de l'Horticulture Belge.

LAND POTATO-SICK AND IN POOR CONDITION OWING TO LACK OF MANURE: D. K. L. The following would afford suitable dressings. Superphosphate of lime, 3 cwt.; ammonia sulphate, 1 cwt.; kainite, 2 cwt.; nitrate of sodium, 1 cwt.; sulphate of sodium, 1 cwt. Magnesium salts are a valuable addition, for magnesia is found in large quantity in the ashes of the tubers and leaves, but if kainite be used as a source of potash, magnesium salts need not be used. Another formula of a special manure is: kainite, 1 cwt.; nitrate of sodium, 1 cwt.; sulphate of iron, ½ cwt.; superphosphate of lime, 2 cwt. If half of the requisite quantity of farmyard manure be used, then two-thirds of these quantities would suffice.

NAMES OF FRUITS: Seeker. The fruits were named on p. 408 in issue of December 1, under the initial "S," but as you missed the reply the names are repeated here: 1, Peasgood's Non-such; 2, Calville Rouge d'Hiver; 3, Cornish Gilli-

flower.—Enquirer, Englishcombe. Very poor specimens, but apparently Apple Braddick's Nonpareil.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—R. E., Bristol. Odontoglossum tripudians, a very good variety of it.—J. P. D. Lælia anceps stella.—E. M. C., Kingstown. Oacidium prætextum and Lælia rubescens (L. peduncularis)—J. W. The Cypridium is C. × nitens, not a true C. insigne.—E. D. 1, Thuya orientalis var.; 2, Cupressus pisifera (Retinospora of gardens); 3, Juniperus communis, erect variety; 4, Leucothoe axillaris; Gaultheria Shallon; 6, Juniperus communis; 7, Cupressus, next week; 8, Berberis Mahonia; 9, B. japonica.

ORANGE-TREES IN A COMPETITIVE GROUP OF PLANTS: Society Secretary. From your question we should judge the class to which you refer to be one for a group of miscellaneous plants exclusive of species, requiring the cultural conditions of a stove. Now, should this condition exclude Oranges? We think not, because most Oranges will grow and fruit in a temperature suitable for warm greenhouses, and they are commonly afforded such treatment. At the same time, should it be proved that the particular specimens exhibited were cultivated in a hot house or stove, the judges would have sufficient reason to disqualify the exhibit.

PALM SEEDS: Lost. It is a good method to stratify them in Cocoanut-fibre refuse, leaf-mould, or any light kind of soil in a dark place, having a temperature of 60° to 70°. A suitable place is to be found sometimes beneath the plant benches in a stove.

PARENTAGE OF CERTAIN CYPRIPEDIUMS: D. E. W. G. C. Burburyanum = C. Boxalli × C. Spicerianum; C. Behrensianum = C. Io grande × C. Boxalli. We have no knowledge of any cross between C. insigne and C. Veitchii having been effected. The crossing of C. callosum with Boxalli produced C. J. Bartals, introduced or raised by Sander.

TAR: C. H. This product of gas making goes under several names—as mineral tar, gas tar, and coal tar. It is that mentioned in the issue of the *Gardeners' Chronicle* for November 17 last. The tar should be thoroughly intermingled with the dried clay and other ingredients, and the remedy should be used before there is the least indication of growth in the Vines, or harm may be done; moreover, the canes should not be severely stripped of their bark, but merely have the looser portion rubbed off with the hands or a hard scrubbing-brush, and the angles of shoots cleaned out with a sharpened bit of hard wood and the brush.

COMMUNICATIONS RECEIVED.—J. D. S., Baltimore, U.S.A.—Dr. Britton, New York—M. Pittier, Costa Rica—Imperial Department of Agriculture, W. Indies—M. D. Bois, Paris—M. Mottet, Paris—C. H.—H. J. V.—W. G. S.—L. C.—E. C.—A. W.—A. S., Ghent—Van B. Tirlmont—J. O'B.—W. W.—C. H. P.—Sir M. F.—E. A. B.—J. B.—S. W. F.—W. G.—Barr & Sons—A. B. R.—W. M.—M. H.—M. J. G., Paris—J. H., Haarlem—Saharunpore—R. C., Philadelphia—T. M., Philadelphia—G. D.—J. A.—H. T. M.—J. D.—H. W.—E. S., Woking—A. Harding, J. J. W.—A. C. F.—W. M.—T. W. F.—N. & Sons—J. C. T.

PHOTOGRAPHS, SPECIMENS, &c., RECEIVED WITH THANKS.—

DIED.—December 29, at 84, Ringford Road, West Hill, Wandsworth, Mr. CHARLES PILCHER, aged 75.

Continued Increase in the Circulation of the "GARDENERS' CHRONICLE."

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

TREBLED.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, AND ALL CLASSES OF GARDENERS AND GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.



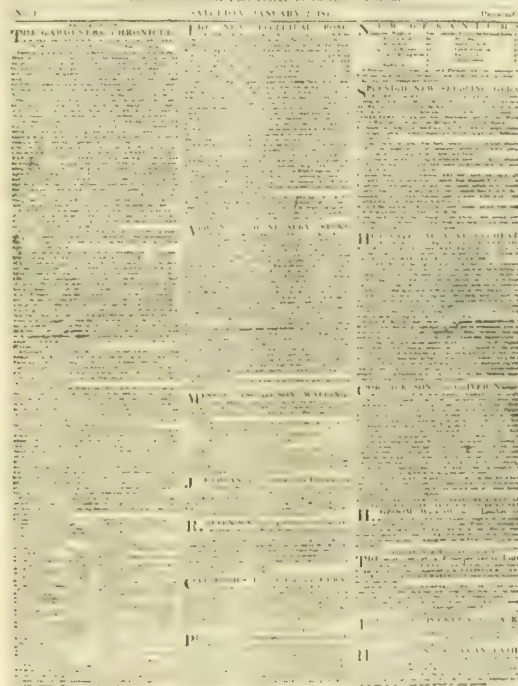
JOHN LINDLEY.



JOSEPH PAXTON.

THE GARDENERS' CHRONICLE.

A STAMPED NEWSPAPER OF RURAL ECONOMY AND GENERAL NEWS.
THE HORTICULTURAL PART EDITED BY PROFESSOR LINDLEY



WILLIAM BRADBURY.



CHARLES WENTWORTH DILKE.

The Founders
of the
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DATURA ARBOREA AT RIBSTON HALL, WETHERBY (MAJOR J. W. DENT).

GARDENERS' CHRONICLE

1901

JANUARY.

1	Tu	First Day of XXth Century. Bank Holiday. <i>Gardener's Chronicle</i> first issued, 1841.
3	Th	
4	F	<i>Amazon</i> steamer burnt, 1822.
5	S	100th Anniversary of the Battle of Marston, 1141.
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FEBRUARY.

1	F	Partridge and Pheasant Shooting ends.
2	S	Canterbury. Roy. Bot. Soc. meet. Société Française d'Hort. de Londres meet.
3	S	<i>Syngrapha</i> <i>undulata</i> found at Exeter. Sun rises 6h. 39m.
4	M	100th Anniversary of the Battle of Marston, 1141.
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MARCH.

1	F	St. David's Day.
2	S	Roy. Bot. Soc. meet. Société Française d'Hort. de Londres meet.
3	S	<i>undulata</i> found at Exeter. Sun rises 6h. 39m.
4	M	100th Anniversary of the Battle of Marston, 1141.
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APRIL.

1	M	All Fools' Day.
2	Tu	Roy. Society Chartered, 1653. Sun sets 5h. 9m.
3	W	Roy. Cal. Hort. Soc. Sh. Waverley Market, Edinburgh.
4	Th	Linnean Soc. meet. Moon full, 1h. 30m. more.
5	F	<i>Good Friday</i> .
6	S	Roy. Bot. Soc. meet. Société Française d'Hort. de Londres meet.
7	S	<i>Easter Sunday</i> .
8	M	Bank Holiday.
9	Tu	Roy. Hort. Soc. Coms. meet at Westminster. Durham, North, and Newcastle Bot. and Hort. Soc. Spring Sh. (2 days).
10	W	Shropshire Hort. Soc. Sh. at Shrewsbury.
11	Th	Treaty of Utrecht, 1713.
12	F	100th Anniversary of the Battle of Marston, 1141.
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MAY.

1	W	May Day. Mean temp. at Chiswick, 51°.
2	Th	Lin. Soc. meet. Dr. Livingstone d. 1873.
3	F	T. E. Haywood d. 1900. Moon Full.
4	S	Roy. Bot. Soc. meet. Société Française d'Hort. de Londres meet.
5	S	<i>4th Sunday after Trinity</i> . Ghent Hort. Exh.
6	M	Mean temp. at Chiswick, 52°.
7	Tu	Royal Gard. Orphan Fund (Annual Dinner at Westminster). Roy. Hort. Soc. Coms. meet at Bath.
8	W	100th Anniversary of the Battle of Marston, 1141.
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JUNE.

1	S	Roy. Bot. Soc. Meet. Société Française d'Hort. de Londres meet.
2	S	<i>Trinity Sunday</i> . Moon full 9h. 53m. morn.
3	M	Ghent Hort. Exh.
4	Tu	Roy. Hort. Soc. Coms. meet at Westminster. Devon County Agr. Soc. Sh. at Torquay (2 days).
5	W	Linnean Soc. Meet.
6	Th	Reform Bill passed, 1832.
7	F	100th Anniversary of the Battle of Marston, 1141.
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JULY.

1	M	Moon Full, 11h. 18m. aft.
2	Tu	Roy. Hort. Soc. Coms. (Roses) at Westminster. Roy. Hort. Soc. of Southampton Exh. (4 days).
3	W	County Borough of Hants Hort. Fête (2 days). Gwynedd Hort. Soc. Rose Show.
4	Th	Norfolk and Norwich Hort. Soc. Rose Show.
5	F	Nat. Rose Soc. Exh. at Crystal Palace de Londres meet.
6	S	R. Bot. Soc. meet. Société Française d'Hort. de Londres meet.
7	S	<i>4th Sunday after Trinity</i> . Ghent Hort. Exh.
8	M	U. Hort. Ben. & Prov. Soc. Comm. meet at Westminster.
9	Tu	Wolverhampton Hort. Soc. Comm. meet at last quart. 3h. 30m. morn.
10	W	Bath Floral Fête and Rose Show.
11	Th	Crème d'été, 1856.
12	F	Mean temp. at Chiswick, 64°.
13	S	<i>5th Sunday after Trinity</i> .
14	S	New Moon, 6h. 11m. aft.
15	M	100th Anniversary of the Battle of Marston, 1141.
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AUGUST.

1	Th	Lammas Day.
2	F	Devon and Exeter Hort. Soc. Sh. at Exeter.
3	S	Soc. Française d'Hort. de Londres meet.
4	S	<i>6th Sunday after Trinity</i> . Ghent Hort. Exh.
5	M	Bank and general Holiday.
6	Tu	
7	W	Moon Last Quart., 8h. 2m. morn.
8	Th	John Laing died, 1900.
9	F	Education Act passed, 1870.
10	S	Consist. in Hort. Soc. Show.
11	S	<i>10th Sunday after Trinity</i> .
12	M	United Hort. Ben. & Prov. Soc. Comm. meet. 100th Anniversary of the Battle of Marston, 1141.
13	Tu	Roy. Hort. Soc. Coms. meet at Westminster.
14	W	New Moon, 8h. 24m. morn.
15	Th	Swansea Hort. Soc. Show. Taunton Deane Hort. Soc. Show.
16	F	Mean temp. at Chiswick, 62°.
17	S	T. F. Rivers died, 1890.
18	S	<i>11th Sunday after Trinity</i> .
19	M	Strasbourg bombaraded, 1870.
20	Tu	Sun rises 4h. 53m.; sets 7h. 11m.
21	W	Shropshire Hort. Soc. Show at Shrewsbury (3 days).
22	Th	Roy. Hort. Soc. of Perthshire Show (3 days).
23	F	Moon First Quart., 7h. 52m. morn.
24	S	Lord John Hay born, 1827.
25	S	<i>12th Sunday after Trinity</i> .
26	M	Sun rises 4h. 4m.; sets 6h. 40m.
27	Tu	Roy. Hort. Soc. Show at Bath.
28	W	Roy. Hort. Soc. Show at Bath.
29	Th	Sun rises 4h. 4m.; sets 6h. 40m.
30	F	Sun rises 4h. 4m.; sets 6h. 40m.
31	S	Mean temp. at Chiswick, 61°.

SEPTEMBER.

1	S	<i>13th Sunday after Trinity</i> . Ghent Hort. Exh.
2	M	Exh. Partridge shooting begins.
3	Tu	Mean temp. at Chiswick, 59°.
4	W	Preston and Foulton Hort. Soc. Sh. (2 days).
5	Th	Moon Last Quart., 1h. 27m. aft.
6	F	Soc. Française d'Hort. de Londres meet.
7	S	<i>14th Sunday after Trinity</i> .
8	S	100th Anniversary of the Battle of Marston, 1141.
9	M	U. Hort. Ben. & Prov. Soc. Comm. meet.
10	Tu	Roy. Hort. Soc. Coms. meet at Westminster.
11	W	Roy. Cal. Hort. Soc. Sh. in Waverley Market (at Hort. Soc. Show).
12	Th	New Moon, 4h. 10m. aft.
13	F	Battle of Tewkesbury, 1471.
14	S	First day of new style, 1752.
15	S	<i>15th Sunday after Trinity</i> . Mean temp. at Chiswick, 57°.
16	M	Sun rises 4h. 39m.; sets 6h. 39m.
17	Tu	Sun rises 4h. 39m.; sets 6h. 39m.
18	W	Dr. Johnson died, 1796.
19	Th	Mean temp. at Chiswick, 56°.
20	F	Battle of Alupa fought, 1451.
21	S	Moon Last Quart., 1h. 33m. morn.
22	S	<i>16th Sunday after Trinity</i> .
23	M	Antiquarian quart. begins. Sun enters Libra at 10h. 50m.
24	Tu	Roy. Hort. Soc. Coms. meet at Westminster.
25	W	Lord B. de Vindesne died, 1890.
26	Th	Lord Grey died, 1855.
27	F	Lord of Boscawen died, 1810.
28	S	100th Anniversary of the Battle of Marston, 1141.
29	S	<i>17th Sunday after Trinity</i> . Mean temp. at Chiswick, 55°.
30	M	Mean temp. at Chiswick, 55°.

OCTOBER.

1	Tu	Pheasant Shooting begins.
2	W	Sun rises 6h. 3m.; sets 6h. 37m.
3	Th	Treaty of Lincolns, 1601.
4	F	Moon Last Quart., 3h. 22m. aft.
5	S	Soc. Française d'Hort. de Londres meet.
6	S	<i>18th Sunday after Trinity</i> . Ghent Hort. Exh.
7	M	National Chrysanthemum Soc. Early Exh. (2 days).
8	Tu	Royal Hort. Soc. Sh. of Fruits at Crystal Palace (3 days).
9	W	Royal Hort. Soc. Sh. of Fruits at Crystal Palace (3 days).
10	Th	Roy. Hort. Soc. Sh. of Fruits at Crystal Palace (3 days).
11	F	New Moon, 11m. aft.
12	S	<i>19th Sunday after Trinity</i> .
13	S	Sun rises 6h. 37m.; sets 6h. 37m.
14	M	United Hort. Ben. & Prov. Soc. Comm. meet.
15	Tu	Roy. Hort. Soc. Coms. meet at Westminster.
16	W	Dr. Timon d. 1896.
17	Th	<i>20th Sunday after Trinity</i> .
18	F	<i>St. Luke</i> . Lord Palmerston d. 1865.
19	S	Sun rises 6h. 37m.; sets 6h. 37m.
20	S	<i>21st Sunday after Trinity</i> . Mean First quart 3h. 30m. aft.
21	M	Battle of Trafalgar, 1805.
22	Tu	Sun rises 6h. 37m.; sets 6h. 51m.
23	W	F. Beyer d. 1875.
24	Th	Methodians Last Supper begin.
25	F	Sun rises 6h. 43m.; sets 6h. 40m.
26	S	Art. Month-long. Moon full 3h. 10m. aft.
27	S	<i>22nd Sunday after Trinity</i> . Partial eclipse of sun at 10h. 30m. aft.
28	M	Edward Tynar d. 1860.
29	Tu	Roy. Hort. Soc. Coms. meet at Westminster.
30	W	John Keats, Port. born 1796.
31	Th	Alfredus, Eve.

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CART GREASE,
HALTER REINS,
NOSE BAGS,
DANDY BRUSHES,
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THE Gardeners' Chronicle

No. 733.—SATURDAY, JAN. 12, 1901.

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THE PAST CENTURY.

(Concluded from p. 1.)

NEW plants have moved on with such enormous strides as the Gloxinia. The last fifty years have seen the pendent, flat-mouthed rolla changed to one quite erect and perfectly regular in outline [regular peloria]. The first erect form was obtained in 1884, and was named *lyana*, after the raiser, Mr. John Fyfe. The plants in the present day are so fine, and withal perfect, that improvement appears to be almost an end. Our cultural methods have advanced so, and it is possible to have the plants in flower months from the time of sowing the seeds. This is an achievement of which those who grew *Gloxinias* forty years ago little dreamed. One of the most notable products of the nineteenth century was the tuberous-rooted *Begonia*. Of the five or so species of *Begonia* which were in cultivation in 1820, *B. nitida* appears to be the only one which has survived. I. TREVOR CLARKE and Mr. W. EARLEY were among the earliest to obtain hybrids of the tuberous-rooted type; the former produced among others *Weltoniensis*, the latter *Digswelliana*. There were other seedlings as well as introductions from foreign parts, including the *B. corallina* from Brazil about 1815. *B. fuchsoides*, which came to us from New Canada in 1846, became very popular for a time, and up to within the last thirty years had a par of most collections of plants. The enormous development of the *Begonia* in

later years is too well known to be mentioned here.

The *Calceolaria*, which at the opening of the last half of the nineteenth century, was of generally tall growth, and small flowered, has been carried to the other extreme. The plants of leading strains are now very dwarf, with dense clustered heads of bloom of large pouch-like corollas, in which the quality of shape which ruled a quarter of a century ago is to a large extent wanting.

The *Cineraria* has passed through a similar experience, the somewhat tall growth and finely-shaped blossoms of a generation ago have given place to a dwarf, compact habit, and very large flowers, which, while in themselves striking, yet to a large extent lack the substance and symmetry of a former period. Mere size, both in the *Calceolaria* and *Cineraria*, may be said to rule; and yet, as if in protest against the uncouth dimensions of later developments, the original type, *C. cruenta*, is being cultivated, and already seedlings show a tendency to increase in form and size; while their tall habits and free-blooming characteristic, make them desirable as conservatory plants. It seems as if the old way of improvement was being re-trodden in our day.

Some such experience appears to be going on in the case of *Primula sinensis*. While in the early fifties only the old but improved types of the red and white were grown, since then there has been an active time of inter-crossing, with the result that the varieties have increased to a great extent, and colours which it was never anticipated by the old growers could be seen in the Chinese *Primrose*, have been obtained, such as rich crimson, shades of lavender, &c.; and double forms have also been secured, so that the value of *P. sinensis* as a decorative agent is evidenced on every hand. Here also the old single type [not the original species] has been taken in hand, and there has been obtained a strain of very free blooming smaller single-flowered varieties, termed "Star" *Primulas*, which are popular in many quarters. But any attempt to improve these seems likely to lead eventually to the improved forms to which a course of half a century's selection have led us.

The *Fuchsia*, which as the late Mr. JOHN LEE stated was brought to London by a sailor at the end of the last century, and purchased and distributed by his father, yet remains a popular greenhouse plant, though now, probably, more employed for the decoration of the flower garden than in the house, and especially is this true of our London Parks. The name of EDWARD BANKS stands out most prominently as an improver of the *Fuchsia* in the past, as that of JAMES LYE does in the present. But many others have assisted in its development. *Fuchsia coccinea* appears to have been the only one known in 1820 [*F. magellanica* is now often grown under this name]; *corallina*, *corymbiflora*, *fulgens*, and *triphylla* are species we owe to the nineteenth century, and of these the Mexican *fulgens* is most widely cultivated. LYE's later improvements show free and vigorous habits of growth united with marvellous floriferousness. The *Fuchsia* is a plant adapted to so many methods of usefulness that it is likely to remain in cultivation for another century to come.

No *Abutilon* was known during the first quarter of the century, for the well-known *A. striatum* did not come to us from Brazil until 1837, and the improvements shown in the new varieties raised from it belong to the last half of the century; so do such species as

insigne, *megapotamicum*, and the variegated leaved *Thompsoni*.

The *Achimenes*, once a much more popular subject among gardeners than it is in the present day, had one representative in this country at the beginning of the century—namely, *A. coccinea*. The violet *A. longiflora*, was introduced in 1841, and this, with *A. grandiflora*, which appeared the following year, have largely given us the fine varieties cultivated in the present day. We thus owe the free-flowering *Achimenes* to the century which has just closed.

The *Amaryllis* (*Hippeastrum*) is a subject which has undergone a remarkable transformation during the past century. DEAN HERBERT led the way, and there were always others who in greater or less degree carried on the work of improvement. It was an epoch-making period in the history of the flower when the Peruvian *H. pardinum* appeared in 1866. This was found to blend with the forms in cultivation, and in the hands of Messrs. VEITCH & SONS, there has originated a strain of great magnificence. The names of CHAPMAN, KER, PERKINS, and others are among the busy workers who are raising seedlings; but it would appear as if the limits of perfection had been nearly or quite reached.

It can scarcely be said that the Crested Cockscomb is holding its own as a stove and exhibition plant, though very fine examples are occasionally seen at flower shows held about the country. The introduction of the plumose form under the name of *Celosia argentea*, which has been considerably improved by selection, has furnished an admirable subject for summer bedding, as can be seen in some of the London parks. It is also of great value for house decoration.

Though there were something like twenty species and varieties of *Lachenalia*, including *pendula* and *tricolor*, in cultivation at the beginning of the century, it is only within the last twenty years that attempts have been made to produce new forms from seed, and the well-known Nelsoni was one of the first to appear; other new forms have put in an appearance during the past ten years.

The improved varieties of *Lantanas* are also the products of the nineteenth century; indeed, several appeared during the close of its first half, and *L. Cameroni* was then a leading greenhouse plant. Of late years a number of dwarf bushy forms have come over from the continent; but they do not appear to have taken the foremost position as greenhouse plants which was anticipated. They are also useful summer bedding subjects.

Veronica Andersoni and its allies are also worthy of notice as at one time popular greenhouse evergreen shrubs, but now more frequently seen in the border.

The *Carnation* and the *Chrysanthemum* dominated at the close of the century. PAGE states in 1817, in reference to *Dianthus caryophyllus*, "of these there are forty-five named sorts." In the following year the flower underwent considerable transformation, but all in the direction of the florist's varieties; and they were also leading on the *Picotée* to better development as edged flowers. MADDOCKS, at the end of the eighteenth century, and HOGG some years later, by their treatises helped to popularise the flower. By 1850 there were fine varieties such as *S. B. Admiral Curzon*, still at the head of its class. PUXLEY was at work with the *Carnation*, and MAY with the *Picotée*, while other honoured names were proceeding upon similar lines. Then came DODWELL, TURNER,

DOUGLAS, &c. Mr. ERNST BENARY of Erfurt sent us his Germania and Fancy varieties. Then a few years subsequently Mr. MARTIN R. SMITH began to raise seedlings, and especially Selfs, Yellow-grounds, and Fancies, and he is now the foremost raiser of the day. Mr. TURNER and others did much to improve the winter-flowering varieties; and the section of Malmaison Carnations has been materially added to. The Carnation is now a very popular flower both in America and at home. The laced Pinks with their striking coloured margins and scented petals appear to be going out of cultivation, while the new race of biennial varieties known as Margarets are becoming increasingly popular.

The Chrysanthemum was practically the outcome of the nineteenth century. During the first twenty years of it, there were a dozen or so known varieties. Seeds were first saved in France, and then in Jersey, and at home; alterations and improvements in form and colour resulted, and the first Exhibition of the flower took place in 1846. In this year Mr. R. FORTUNE introduced the Chusan Daisy, which may be said to have originated the race of Pompon varieties; and in 1862 he sent home the first Japanese types. The latter, improved beyond all hope and promise, are now the dominant section; though the old incurved type has also been greatly improved of late years; though as some think at the expense of the exquisite symmetry of form which once prevailed. An early flowering section of Japanese varieties is rapidly becoming popular, while some of the varieties are largely grown as cut blooms for market purposes. R. D.

ORCHID NOTES AND GLEANINGS.

DENDROBIUM BURFORDIENSE ×.

FROM The Gardens, Gatton Park, Reigate, come flowers of *Dendrobium Burfordiense* × with four perianth segments, S P L L, and a central column with two anthers, one in front, one at the back of the flower, A a. Of the segments one is like an ordinary sepal, one like a side petal, whilst the other two occupy the position of the two lower sepals, but are lip-like. This arrangement may be illustrated by the following formula:—

S
P^A
a
LL

Another flower from the same pseudo-bulb had one dorsal sepal, one side petal, one lip-like petal placed at the side, a central lip, and a column with two anthers placed side by side—

S
P A A P
L

Both flowers show that tendency to arrange their segments in groups of two that is so common among malformed Orchids. M. T. M.

LYCASTE LASIOGLOSSA.

This rare species lately flowered in the garden of Walter Cobb, Esq., Dulcote, Tunbridge Wells (gr. Mr. J. Howes), and now we receive a flower of this species from Messrs. Charlesworth & Co., Heaton, Bradford. Both correspondents state that their specimen flowered from out of imported plants of *Lycaste Skinneri*. The flowers are equal in size to those of *Lycaste Skinneri*, but rather narrower in all the segments; the sepals are reddish-brown, yellowish towards the margin and tips; the lip yellow, stained with red on the inside; the front lobe shaggy, or covered with long whitish-yellow hairs. Its peculiar colour renders it very desirable. Some time ago we received a natural hybrid from

M. P. Wolter, Magdeburg, Germany, imported with *Lycaste Skinneri*, and which was evidently a natural hybrid between it and *L. lasioglossa*.

CYPRIPEDIUM × MARY BEATRICE.

At the Temple-Show of last year, the Orchid Committee, after some discussion, voted an Award of Merit to two plants of this fine hybrid between C. × *Gowerianum* magnificum and C. *bellatulum*, shown by G. W. Law-Schofield, Esq., and by Messrs. Charlesworth & Co. A splendid example bearing two flowers on a spike is now sent by G. W. Law-Schofield, Esq., who calls attention to its great improvement on the plant previously shown. The broad upper sepal is of a bright dark rose colour, and has a white apex, and dark lines radiating from the base. The petals extend 6 inches from tip to tip, and are each an inch wide, rose colour, with green markings at the base, and inverted purple spots in lines over the greater part of the surface. The lip is dark reddish-purple on the face and pale green beneath. C. × *Gowerianum* is between C. *Lawreanum* and C. *Curtisii*, both noble species, and in this hybrid the fine features of each may be traced.

ODONTOGLOSSUM × RUCKERIANUM.

A very fine form of this showy natural hybrid equal in size to that of an ordinary O. *crispum*, is kindly sent by G. W. Law-Schofield, Esq. Its chief characteristics are the broad sepals and petals, their fine markings, and the contrast which these parts of the flower make to the creamy-white lip; the latter is yellow at the base, and possesses some slight brown markings, but no conspicuous blotches. The sepals and petals are tinged with rose-purple, the sepals bearing several large, confluent, red-brown blotches on the inner two-thirds of their length; and the petals have smaller spots of the same colour on the basal halves. It is a showy flower, and ranks with the favourite spotted O. *crispum*. J. O'B.

LÆLIA ANCEPS GRANDIFLORA.

These spikes (2) which I am sending for your inspection were removed from a plant bearing forty-five spikes and 133 flowers. Of other coloured forms we have had seventy-seven spikes with 214 flowers. Of white varieties, we have twelve spikes with fifty flowers. The total number of spikes has been 134, with 397 flowers. The *Lælias* here are pretty generally known to Orchid-growers through the country, and, as they never have been better with us, I think they would be much appreciated if seen in the *Gardeners' Chronicle*. Benjm. Cromwell, gr. to T. S. Timmis, Esq., Cleveley, Allerton.

[Please send the photographs for inspection. Ed.]

LINDENIA.

The plants figured in the current number are:—

CATTLEYA ELISABETHÆ × from C. Mossiæ by C. Schilleriana, segments buff, flushed with deep rose, lower lobes of lip enveloping the column, front lobe expanded, roundish, purple, striped with a white edge, and with a yellow throat. Hort. Linden, t. DCCXVI.

ODONTOGLOSSUM CRISPUM VAR. AURIFERA.—Flowers flat, pentagonal; segments broad, acute, undulate, pure white, with large yellow spots. Hort. Linden, t. DCCXVII.

LÆLIO-CATTLEYA ALBERTI ×.—A hybrid between C. *Lælia* purpurata and C. *velutina*; segments, pale primrose; lip convolute at the base; anterior lobe oblong, contracted beyond the centre, white, with red-purple stripes. Hort. Linden, t. DCCXVIII.

CYPRIPEDIUM DRAFSIANUM ×.—A hybrid from the Burford Lodge variety of C. *Leeanum* × by pollen of C. *villosum*. The standard is broad, narrowed at the base, white, spotted with purple; petals, oblong spatulate, yellow, flushed with bronze; lip, brownish-purple, shining. Hort. Linden, t. DCCXIX.

POTATO SETS: GREENING V. NON-GREENING.

It is a very common practice amongst professional gardeners and others throughout the country, when taking up their Potato crops during the autumn months, to select those which are most suitable for "seed" purposes, and expose them for several days to the sun, in order that they may

become green throughout. This is a very old practice, as various periodicals show. On the other hand, there are many others who do not agree with this practice of greening. Lately I have interested myself a good deal on the question, chiefly on account of the various reasons given by those who green their "seed" before storing away in the autumn. The following are some of the principal of them, as I have heard expressed:—

1. Exposure to the sun (greening) ripens the tubers.
2. Increases their vegetative powers, and heavier crops are thus obtained.
3. It thickens and hardens their skins, and thus renders them less liable to be attacked by disease when stored.
4. It strengthens the constitution of the tubers, so that the plants are better able to withstand disease when growing.
5. It prevents early sprouting; or, according to others, it causes them to sprout early.
6. The tubers resist frost better when "greened" than when "not greened."
7. The chlorophyll passes from the "greened" tubers to the young stems and leaves in the earlier stages of the growth of the plant, and is thus of great benefit.

No. 1. Does exposure to the sun and air ripen the tubers? There is no question but that the tubers for planting should be well and thoroughly ripened, and possibly the finishing process may be completed after separation from the parent plant, but this can be accomplished by proper storage without greening. Potatoes for planting purposes should never be taken up until thoroughly ripe. So far as the work of the parent plant is concerned, and as certain changes are taking place within the tubers during their resting stage, we may consider that ripening still goes on until the tubers begin to grow again.

No. 2. Have any experiments been carried out to test results in the weight of crop produced, between "greened" and "non-greened" sets? Unless they have, we have no argument on this part of the question.

No. 3. When "seed" Potatoes are carefully stored in single layers in trays or boxes, thin skins would naturally dry and harden, whether greened or not, and the results, as far as disease is concerned, would practically remain the same as between these two methods of practice. I am sure nobody will deny that all the green parts of Potatoes are quite as susceptible to disease attacks as those underground, and which are not greened. We have what are called "disease-resisting" varieties, and it is thought that the skins of these tubers are thick and rough, and therefore better able to withstand disease; but it may be the constitution of these varieties are stronger and sturdier than other varieties, for the time being. When newer varieties are sent out, we often find such to be the case, but only for a time. Constant cultivation soon weakens their constitution, and their disease-resisting power fails.

No. 4. That greening the "sets" strengthens the constitution of the plant in after growth, so as to give them greater disease-resisting powers, I do not think has ever been proved.

No. 5. I think experience is more largely on the side of those who consider that "greening" causes the tubers to sprout earlier, and, if such is the case, it might perhaps be an advantage to those who require to force early, but not otherwise.

No. 6 will hardly bear investigation. We all have had very sad experience of the fact, that green parts of plants are very susceptible to the slightest frost.

No. 7 we may consider equally unreliable. Place a few Potato "sets" of each "greened" and "non-greened" in a dark place until they grow freely, the shoots from each will be equally pale in colour. Green parts of plants soon lose their colour when placed in the dark, as is well known in practice.

Chlorophyll bodies do not pass from cell to cell, as these good people imagine.

But I think there is still another question to consider. It is this. What effect would the production of chlorophyll have upon the tubers? Is it of any value at all? The tubers are the place where food is stored, which has been manufactured in the green parts of the parent plants, to be used for the purposes of growth during the following year. The tubers are greened by exposure. Why? It would appear that in the well-ripened tuber, quite sufficient food is already stored up for all the purposes of the plant. What then can be the object in greening? Besides, if the "sets" are stored away for the winter in a dark place, the green colouring matter soon disappears. If they can be kept green until planting time, they are then buried in the soil away from the light, where the action of the chlorophyll corpuscles, in the presence of the necessary vital protoplasmic forces,

insignia, only given for exhibits of high-class excellence, to induce cultivators to bring forth their very best work. The commonplace and the uninteresting finds no room at the Drill Hall." [!]

However commendable the object of the Society in holding these periodical exhibitions as one greatly calculated to further the interests of sound cultivation, and consequent production of nothing but the choicest in floriculture and horticulture, I may be allowed to say, without offence, that the scope of the Society should not be restricted to the mere granting of its insignia for first-class products, but might afford greater facilities than at present obtains to the general market gardening community for inspecting these periodical exhibitions, and by various means do its utmost to induce growers to send nothing to exhibitions or to market save produce of the very best quality, thus educating the public up to a high standard, calculated in time to be the means of keeping, to

by employing sugar and other malt adjuncts." What has happened within the last few weeks, plainly shows that "what the public asks for" is not exactly what it should be supplied with, and this applies to vegetable produce quite as much as to the production of beer.

To come to the question of remedy in connection with the subject under notice, I shall offer my remarks under three heads, namely, Labour, Sowing and Planting at the proper season, and the question of the encouragement of Small Holders of Land.

LABOUR.

The question of labour is, of course, of vital importance in the successful working of a market-garden; and yet, it is to be feared, at the present time there are more gardens in England greatly undermanned than otherwise. It would be well were all growers of market produce to adopt and act upon the maxim "Labor omnia vincit" as their motto. It is far too common a sight to see a market gardener struggling on with the object of gaining a living out of a holding endowed with productive soil, and furnished with buildings and other appurtenances of the best description, but lacking the one great essential—sufficient labour, without which it is an impossibility for him to benefit either himself or the public he is trying to cater for. The cause of this state of things is not infrequently to be found in the fact that so many untrained men, at first in possession of quite sufficient capital, if properly handled, to establish themselves in a lucrative business, spend, from the want of knowledge and experience, the greater portion of their funds at the commencement of operations, and are compelled to dispense with a part of their working staff at a time and under different circumstances it ought to have been augmented.

Another type of grower for market, or rather, trade destroyer, is he who, being possessed of abundant capital, and a "guid conceit o' himself," employs skilled workmen on good wages, and although devoid of practical knowledge himself, will by no means allow his *employés* to perform any cultural act without his (the governor's) express order, which is far more frequently wrong than right. In time these *employés*, seeing things going steadily to the bad, but being powerless to remedy the evil, lose interest in their work; repeated rebuffs chill their enthusiasm, and they individually or collectively resign and go in quest of more congenial employment, frequently compelling the employer to fill their places with men as devoid of horticultural knowledge as himself, which only intensifies his difficulties.

It is not often that a man trained from his youth in matters pertaining to horticulture makes such mistakes, but he is quick to perceive, encourage, and take advantage of skill and ability in others to the benefit of all concerned, and, being in possession of lengthy experience, he is not likely to exact from his *employés* anything but a fair amount of work, or fritter away capital or labour, while at the same time taking care to employ, all the year round, a sufficient force to maintain his grounds and houses in an "up-to-date" condition, always bearing in mind that "labour conquers everything?" As a primary remedy, then, for the present unsatisfactory condition of our market gardening trade, I would suggest as a *sine quâ non* the employment and rational treatment in every instance of an abundance of skilled labour. J. Lowrie.

(To be continued.)

CORYANTHES MASTERSIANA.

OUR illustration (fig. 9), gives a representation of one of the two remarkable new *Coryanthes* described by their discoverer, Consul F. G. Lehmann, of Popayan, in the *Gardeners' Chronicle*, October 24, 1891, p. 483. The one species there described is *Coryanthes Wolfii*, and of the other the author says:—"The second species, *Coryanthes Mastersiana*, which I dedicate to Dr. Maxwell T.

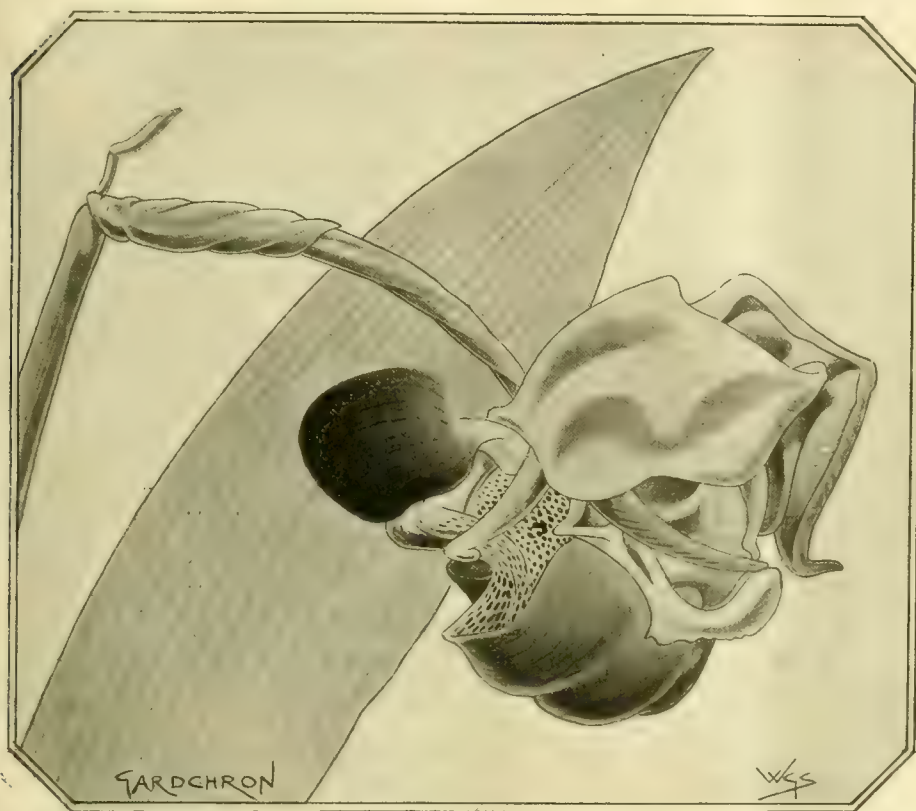


FIG. 9.—CORYANTHES MASTERSIANA.

would be most effectually neutralised. It would also be interesting to know, whether the production of chlorophyll within the tubers would have any prejudicial effect upon the storage food contained without it. It would be well if we could have the experience of others of your correspondents upon this subject. Alfred Gant, Leeds.

MARKET GARDENING.

IN continuation of my remarks on the unsatisfactory state of our market-gardening trade and supply of our markets, I would like to quote, as applicable to the subject, the following, which appeared lately in a London newspaper:—"For those interested in the cult of flowers, a visit to the Royal Horticultural Society's shows repays any trouble, for it is of an educative nature, as useful hints and new knowledge are ever to be obtained. As is known, the object of these displays is to introduce new varieties of plants, flowers, or fruit to public notice, and by the award of the Society's

a great extent, the trade which we are now letting slip through our hands in favour of the foreigner.

I cannot imagine for a moment that such teaching as the following, which appeared the other day in a largely circulated periodical devoted to farming and gardening, can have any other effect than a damaging one on those who are striving in the right direction to supply our markets with nothing but first quality produce. "Always cater for the public taste. It may not be altogether tasteful to oneself, but it means money; and I take it that is what most men are after. Do not attempt to force an article on the public when it is not wanted. One of the best points in production is to turn out a good supply of the particular article that the public requires."

The recent beer scare in the north of England has drawn the following remarks from the brewer's side of the question. "What the public ask for is a light, pretty beer, which becomes bright very quickly. This can be produced most advantageously

Masters, is of Colombian origin, where it grows on trees, or woody lianes, not far above the ground, in dense and exuberantly-developed woods at the lower extremity of the valley of the Cauca, at an elevation from 800 to 1100 mètres. The plants are large, and very floriferous." The author then gives full descriptive details, and appends the following interesting remarks:—"There are but few plants in the entire vegetable kingdom which are more interesting, and which afford such a varied amount of material for the student of vegetable physiology. Everything relating to *Coryanthes* is curious, and arrests the attention of the observer, even its spontaneous mode of growth. Wherever a large mass is found in the tropical forests of South America, numerous ants surround its root-masses. This ant is a small-bodied species of *Myrmica*, possessed of a strong aromatic smell. It bites very severely, so that it requires some courage to meddle with the plant. These ants seem to be indispensable to the well-being of the plant, for if these animals do not collect around the roots it appears not to do well. Even in a cultivated state, as well as in the house of my friend Dr. Wolf, at Guayaquil, as in my own country residence, I have observed the same facts. But nothing surpasses the flowers. The very peculiar organisation of the whole flower, the position each organ assumes in relation to another, the secretion of a sweetish fluid always retained in great quantity in the bucket—all is interesting, and invites both to study and investigation."

Our illustration was prepared from a specimen exhibited by Sir Trevor Lawrence, Bart., Burford (gr., Mr. W. H. White), at the Royal Horticultural Society's show at the Drill Hall, Westminster, on November 20 last year, it being the second time that the species has flowered at Burford. The ground colour of the flower is yellowish, tinged and freckled with different shades of copper-red or light claret-crimson. [The structure of these curious plants was the subject of illustration in our columns on July 17, 1897, p. 39 Ed.]

PARIS.

THE "HALLES CENTRALES" OF PARIS.

I CANNOT say that I am in accord with those Englishmen who find everything in Paris much better managed than in London. There are, indeed, many things and institutions in the French capital whose management leaves little to be desired, just as there are others notoriously badly looked after. The "Halles Centrales" may not come within either of these two categories, but when, as is sometimes done, they are held up as a pattern to the management of Covent Garden, I feel the force of the old epigram about comparisons being odious. I know nothing about the inner working of the great French market, but regarding the place from the point of view of a mere visitor, the "Halles" are grievously in need of firm supervision. For variety and strength of "smells," Cologne at its worst must be Paradise when compared with the "Halles Centrales;" and Covent Garden, bad as it is at times, is the personification of all that is sweet and fragrant by the side of its great French analogue. In a place where every conceivable article of an edible nature is sold, it is obvious that many "smells" must prevail; but the general aspect of the passages and principal thoroughfares is one of superfluous dirtiness, and would not be tolerated anywhere in London.

In spite of their dirt, and of the incompetence which prevails in the general oversight, the "Halles Centrales" form one of the most interesting of the many sights of Paris. They, or rather the "Dames," who form so considerable an element in the *personnel* of the "Halles," have played a conspicuous part in the history of Paris. The "Halles Centrales," which comprise an area of about 22 acres, and consist of ten pavilions, cover the ancient site of a large cemetery, the cloisters of which were closed in 1786. The present market was designed by Baltard; and carried out under his

direction from 1854 to 1868, at a cost of 12,000,000 francs, over and above the cost of 249 houses pulled down to make room for it, which amounted to 27,000,000 francs. Each of the ten pavilions is 120 feet by 100 feet, and contains 250 stalls, for each of which a charge of about one franc per day is paid to the city. The sales of fruits and vegetables were originally held in the centre of the old Halle au Blé; in 1790 they were transferred to the Marché des Innocents, and continued there until October 17, 1858, when this market was suppressed. Fruits and vegetables were then installed in pavilion No. 8; another move was made on April 11, 1874, when they were transferred to No. 6 pavilion. Beneath the ten pavilions are about 1,200 other stalls for storage, dressing of poultry, &c.* These cellars are rarely explored by the average traveller, but they are well worth seeing, and an application at the overseer's lodge, backed by a small fee, will secure the necessary permission.

It is a mistake to suppose, as is often done, that all the food of Paris first passes through the "Halles Centrales." There are several other markets in various parts of Paris, whilst many large consumers dispense entirely with the "middlemen," and obtain their supplies direct from the growers. Nevertheless, the "Halles" form an inexhaustible subject of study, and the publication of an article in the *Journal de la Société Nationale d'Horticulture de France* in June last on "L'Approvisionnement des Halles Centrales de Paris en 1899," by MM. D. Bois and G. Gibault, reveals many astonishing and remarkable facts so far as regard "les fruits et les légumes" which are received into the capacious pavilion confined to horticultural produce. This highly important statistical article has been reprinted in pamphlet form, and I am indebted to the courtesy of Monsieur D. Bois for a copy. As the facts are based upon the official annual report, their authenticity may be absolutely relied upon.

The fruits and vegetables which arrive at "The Halles" fall into two divisions, those which are forced and those "de saison." The forcing establishments of Bailleul and of Roubaix (Nord), of Quessy (Aisne), Versailles, Rueil, Sarcelles, Le Cheiratte (Seine-et-Oise), of Pierrefitte (Seine), supply Pavilion No. 6 from December to the end of May. Until a comparatively few years ago, France was largely dependent on foreign sources for forced fruits and vegetables; but the establishment of the "droits de douane" in February, 1892, had the double effect of crippling foreign supplies and of encouraging the home cultivation of what are known as "fruits de luxe;" the result has apparently been highly satisfactory.

So far as fruits "de saison" are concerned, during winter Algeria sends Artichokes, Peas, Beans, and Potatoes; in summer, Grapes, Almonds, and Dates are also received from that colony; whilst Spain sends Beans, Apricots, Peaches, Grapes, Cherries, Oranges, and a few other fruits. Asparagus is cultivated extensively not only in the suburbs of Paris, but also at Lauris (Vaucluse), Perpignan, in the south, west, and midland parts of France. Peas begin to arrive first from Hyères from the middle of March, and then in succession from various other localities until the end of May, when the crops in the immediate vicinity of the city are fit to gather. The first supplies of Strawberries like those of Peas, come from the favoured district of Hyères, the supply beginning early in April; they are small in size, and are contained in baskets or punnets; the larger varieties come from Carpentras, Le Pernes, and other places towards the end of April.

The trade in Mushrooms, of which the French are such skillful cultivators, is, as might be supposed, an enormous one, and during the year 1899 the Halles alone received 2,985,717 kilogrammes, which have produced a total of 3,738,688 francs, giving

* A vivid picture of the "Halles Centrales" will be found in M. Emile Zola's *Le Ventre de Paris*; many other books have been published on the subject, notably *L'Estomac de Paris*, by M. A. Coffignon.

an average of 1 franc 35 centimes per kilogramme—a kilogramme being equal to 2 lb. 3½ ounces of our weight. In Watercress, also, a very large business is done, and the sale of 5,973,750 kilogrammes shows a total of rather over 1,000,000 francs. One "cressonnière" at Gonesse (Seine-et-Oise) produces during the spring months a daily supply of sixty "paniers," each of which holds 75 kilogrammes.

During the year 1899 Pavilion No. 6 and its annexes have received fruit and vegetables to the weight of 15,224,052 kilogrammes, or over four million kilogrammes in excess of 1898; and of this enormous total France alone has contributed 14,628,037 kilogrammes, thus leaving for the foreign grower a very small slice of the Paris trades so far as the wholesale department of the Halles is concerned. During 1899 Grapes were exceedingly abundant, nearly two million kilogrammes having been received as against rather over half a million kilogrammes in the year preceding. It is interesting to note that whilst the trade with Belgium, chiefly in Endive, Peaches, and forced Grapes, has decreased by just one-third in 1899, as compared with 1898, the importations from Italy to the Halles, chiefly Oranges and Citrons, have more than doubled.

MM. Bois and Gibault have drawn up a most interesting and valuable tabular statement, in which they show the maximum and minimum wholesale prices paid for the principal fruits and vegetables in the years 1898 and 1899. The prices of these as of most other articles of commerce, are governed by various circumstances, into which we need not enter, but which will account for the varying prices of one season as compared with another. I think the following selection from the tabular statement above referred to will be found interesting to English readers. The prices are those of 1899:—

Description.	Maximum. Minimum.	
	fr. c.	fr. c.
Apricots, per 100 kilogrammes ..	127.91	93.50
Artichokes, per 100	24.55	13.92
Asparagus, per bunch	20.17	4.17
Cherries, per 100 kilogrammes...	108.99	65.18
Citrons, per 100	8.30	5.55
Cress, per panier of 249 bunches ..	23.12	8.50
Endive, per 100 kilogrammes ..	67.37	57.59
Strawberries, per kilogramme ..	1.86	1.15
Gooseberries, per 100 kilogrammes ..	22.48	21.08
French Beans, " "	119.06	55.92
Oranges, per 100	9.85	5.90
Peaches, per 100 kilogrammes ..	139.06	69.46
Green Peas, " "	62.80	49.86
New Potatoes, " "	20.01	15.97
French Grapes, " "	145.23	69.35
Tomatoes, French, " "	87.98	28.78

So much, then, for statistics of the wholesale department of the Halles Centrales. Those relating to the sales à l'aimable in what is designated the *carreau forain* or "les emplacements situés le long des pavilions," or in the streets in the immediate vicinity of the Halles, are also noteworthy, and the total of the year 1899 is placed at the enormous amount of 241,085,850 kilogrammes.

It is greatly to be hoped that M. Bois and his colleague will now do for the cut flowers received at the "Halles" what they have done for the fruits and vegetables. In the meantime, however, a writer in *Le Siècle* of January 2 last gives a few particulars *à propos* of "le jour de l'an" at the "Halles," and of the vast quantities of flowers which appear at the great central market. He tells us that on the last day of December the "Halles" received 5,320 baskets of flowers; that on the day previously 4,700 baskets were received, and that the weight of each basket varied from 3 to 5 kilogrammes—a kilogramme being equal to about 2½ lb. of our weight. France herself supplies the lion's share of the cut flowers of the "Halles Centrales," although large consignments arrive from Italy, Holland, and Belgium. W. Roberts.

THE MOCASSIN FLOWER.

(CYPRIPEDIUM SPECTABILE).

THIS plant has of late years been imported by the thousand from the Northern United States of America, until botanists on the spot now have to walk or ride a long way in order to find it in bloom. Most of the imported plants die off after flowering once or twice in our British gardens. So often is this the case that it is all the more pleasant to hear now and then of something like permanent success.

At Straffan Gardens, in co. Kildare, there was last spring (1899), a bed of this plant, which produced in all 400 fine flowers! In the spring of 1900, one-third of the plants were sent away, but the existing bed of 25 clumps bore 300 flowers, and among them were many bearing two, and a couple of stems bore three flowers each, both being on the same plant. I send you a photo. (fig. 10), taken by Mr. John McLeith, showing the bed as it appeared this last spring (1900). Mr. F. Bedford commenced with five imported plants only, from the sale rooms, eleven years ago, so that good progress has been

NURSERY NOTES.

MR. E. F. SUCH'S ESTABLISHMENT,
MAIDENHEAD.

At this nursery outdoor flowers are largely grown for the London market, and a general nursery and seed trade is also carried on. The out-of-doors Chrysanthemums were a special feature, the open weather being favourable to the development of the blooms, but the season came to an end on November 11, when frost, and subsequently heavy rains brought them to a close. The varieties that Mr. Such grows largely for sale are Flora, a yellow-flowered Pompon, 2½ feet in height, one of the earliest and most continuous to bloom, and although an old variety, it is grown here by the acre; Crimson Pride, an erect growing Japanese, of 3 to 4 feet in stature, a crimson of a bright tint. This variety will be grown more extensively another season, it is preferred to Harvest Home for market purposes; Coral Queen is a pleasing variety,

good market variety; and a yellow sport is also here grown in considerable numbers.

The hardy cut flower trade is now practically over until the Wallflowers come on in quantity, 2 acres of them are grown here—grand, bushy plants, many measuring 18 inches in diameter. Growing on a gentle acclivity, the plants are not killed off by frost, as would sometimes be the case in low-lying or damp situations.

Among several herbaceous subjects grown in quantity for cut flowers, mention may be made of the principal. Double and single-flowered varieties of *Pyrethrum roseum* form an important early-summer flower, and 2 acres are planted with the varieties. Adjoining the latter were 2 acres planted with *Physalis Franchetti*, the stems of which, when clothed in autumn with their large and bright orange-scarlet calyces, find a ready sale for church adornment and the decoration of rooms. The early spring-flowering *Doronicum*, "Harpur-Crewe variety," is grown in considerable quantities, chiefly for cut flowers, while more than an acre of land is devoted to the pretty white-flowered *Achillea*



FIG. 10.—THE MOCASSIN FLOWER, CYPRIPEDIUM SPECTABILE, AT STRAFFAN, CO. KILDARE.

made. The bed is situated on the north side of a wall, and is also partially shaded, but not overhung, by a fine old evergreen Oak towards the east. The soil specially prepared for this plant consists of bog-earth or peat, and leaf soil, and a slight mulching is afforded when the plants are below the surface during the winter. When in full bloom, a temporary awning is used to preserve the blooms from bleaching or browning in the sun, and to retard their decay as long as possible.

The plant is so beautiful as thus seen happy, healthy, and luxuriant, that I hope this slight record and picture may induce others to take up its culture in the open air, and to treat it in the right way. It is a wood-plant, growing in leaf-mould and *débris*, and in cool shade. Full sunshine, or lime in the soil, or water, are fatal, and shelter from cold winds is most necessary when the plant pushes up its young and tender growths early in the year. The plant may also, if desirable, be grown in shallow boxes or pans, in peat and leaf-soil, in a cool and shady frame, and is then handy for removal indoors or to the conservatory when it is in flower. It now and then does well year after year in peat-beds sheltered by Rhododendrons, Azaleas, and other so-called American plants, but I have never seen it so fine and permanently well grown as at Straffan Gardens. F. W. B.

the flowers of a "crushed Strawberry" colour, and freely produced on stiff stems 3 feet to 4 feet high; Madame Eulalie Morel, flowers of salmon pink, height 3 feet, an attractive flower; Lemon Queen, a bronzy-yellow flower, the plant reaching a height of 2½ feet, is also a good market variety; Madame Desgranges, and its yellow sport, G. Wermig, are also still being cultivated in large quantities, and in their respective colours they are excelled by few; Marie Masse, of a height of 2 feet, another Desgranges sport, has a silvery-pink and a bronze-coloured flower, and a dwarf habit; Crimson Queen is a crimson self with a bushy habit, free blooming, and of a height of 2½ feet. Other varieties grown in quantity are Madame Gustave Grunerwald, flowers pink and white; Mrs. J. R. Pitcher, blush; bronze Martinmas, and also pink; Ivory, white; Sœur Melanie is also grown in quantity, it is a good old variety, with pure white flowers, usually at their best through October, and it withstands inclement weather much better than many varieties. Source d'Or, although it is not an early-flowering variety, is grown in considerable quantity in the open; the plants did remarkably well in 1900—it usually furnishes useful blooms, although being rather late cannot be relied upon as the foregoing. The old variety La Triomphante is also found to be a

ptarmica fl.-pl. "The Pearl." Half-an-acre is devoted to the growth of *Harpalum rigidum* and *Chrysanthemum maximum* respectively; rather more than double that space being allotted to Gaillardias in variety, but chiefly of the single-flowered section. *Coreopsis grandiflora* is a useful flower for market purposes, but the extra time taken up in cutting and bunching prejudices its cultivation on a large scale.

Nine thousand plants of the yellow Marguerite, Etoile d'Or, are set out annually to furnish plants for cutting from; while a few varieties of Asters, and Michaelmas Daisies are grown in large numbers, and furnish a useful variety of autumn flowers. The variety Robert Parker claims the largest amount of space—an acre, *A. Amellus major*, *A. multiflorus*, and *A. ericoides* being grown in lesser quantities.

Many other herbaceous subjects are cultivated, white Pinks claim considerable attention, a home-raised variety, slightly smaller than Mrs. Sinkins, being the principal one grown for furnishing cut blooms. On the day of my visit about an acre of these were being ploughed up, having stood their allotted time. Daffodils in variety, such as Sir Watkin, Emperor, and others that find a ready sale, occupy a space of some 20 acres; they are also grown in spare spots among fruit-trees and fruit-

bushes, where space will permit. The Double White Narcissus is found to do well here.

Dahlias are important plants, and their popularity is increasing; some 20,000 are grown here specially for cutting from, besides a select stock of the Cactus varieties for sale as plants, and for exhibition. White, and bright coloured Pompon varieties, comprise a large proportion of those grown for cut flowers, and the remainder consist of a few Cactus varieties with distinct colours. A simple method is here adopted for storing the roots, which is by clamping them, as practised by farmers with Mangold Wurzel, the roots being made into a ridge, the stalk end downwards, then covered with litter, and finished off with a good coating of soil; some lengths of drain-pipes or "wisps" of straw are inserted at intervals of a few feet apart along the ridge, to permit the escape of moisture. As seen in the large field by the side of the hedge, this Dahlia clamp, some 60 or more feet long, presented the appearance of an ordinary Mangold or Potato clamp, and passers-by would scarcely suppose the contents to be roots of the Dahlia, that will produce thousands of bunches of flowers the next season. C. H.

CLEMATIS LANUGINOSA.

How well this plant, with its pale lavender flowers, is adapted for planting on walls or trellises, may be seen in the accompanying illustration (fig. 11, p. 23), for which we are indebted to Mr. Fitzherbert. It is taken from a plant in the gardens of Mr. G. S. Soltan Symons, near Plymouth, a garden which will shortly be more fully alluded to in these columns. *C. lanuginosa* was described by Lindley in Paxton's *Flower Garden*, iii., t. 94, and in the hands of Mr. Jackman, of Woking, it proved the progenitor of many of the fine hybrids sent out from the nursery at Woking. The still popular *C. Jackmani* × was raised between *C. lanuginosa* and *C. Hendersoni* in 1858. The flowers are produced on the young wood, little pruning being required, but plentiful feeding.

NOVELTIES OF 1900.

IN former years we have pointed out the increasing importance of garden hybrids and the probable decline of the importation of new plants as a consequence of the hold of the former on horticulturists. A review of the past year proves that our conclusions were correct, for the tale of the novelties of the year is confined almost exclusively to garden hybrids with some few novel varieties of imported species. While quite prepared to do honour to the pretty parvenu, the garden hybrid, there are still many plantmen who regret that the collectors' calling is falling into desuetude, and that, for the present at least, there are no new plants to be recorded as being imported in quantity which will rank with the standard species already in cultivation. The importance of the introduction of a fine new species such as *Dendrobium Phalenopsis*, *Cattleya labiata*, or *Eucharis grandiflora*, is that the costly search makes the collector strenuous in his endeavours to furnish as large a quantity of it as possible; and thus the beautiful new comer gets fairly well distributed. But with the novelties of Orchids, especially to which we now call attention, the hybrids dribble forth in ones and twos, except in the case of some few very free seeders, and the phenomenal varieties in unique plants, so that the possessors of the originals, or in the course of time some portion of the originals, may have the pleasure of knowing they have something which their less fortunate brethren have not, and gardens in general are not benefited.

THE ORCHIDS.

If more of our amateurs were to follow the example of Sir Trevor Lawrence, Bart., the President of the Royal Horticultural Society, and distribute their favours among imported Orchids, hybrids, and species of botanical interest, the

importing of Orchids, entailing travel in unfrequented localities, would be remunerative, and our gardens might be enriched by some of the many fine species already known to botanists, and others which have not yet been discovered.

In the Burford collection, the flowering for the first time of the very remarkable *Trevoria chloris*, Lehmann, a new genus named in honour of Sir Trevor Lawrence, was an important event. In the same class come the singular-looking *Maxillaria scurris* (Lehmann), *Coryanthes Mastersiana* (Lehmann), *Masdevallia burfordiensis*, *Mormodes buccinator* Rolfei, *Dendrobium Jerdonianum*, *Maxillaria leptosepala*, *M. arachnites*, *Tainia penangiana*, *T. speciosa*, *Ansellia humilis*, *Angraecum filicornu*, and many other pretty botanical species in the Burford collection, some of them not new to science, but not previously exhibited. The pure white *Calanthe Regneri* hololeuca and *Lælia anceps* Leeana also were certificated; and among the hybrids were the fine *Dendrobium* × *Melpomene*, *D.* × *Burberryanum*, *D.* × *Clio superbum*, *D.* × *Dalhousi-nobile*, *Masdevallia* "Bocking hybrid," *Cypripedium* × *Wiertzianum* "Burford variety," and other *Cypripediums*, and some further additions to the Burford hybrid *Calanthes*.

Sir Frederick Wigan, Bart., Clare Lawn, East Sheen, exhibited at the Royal Horticultural Society's meetings some of the best plants of the year, chiefly hybrids, the following having received awards:—*Lælia-Cattleya* × *Wigania* and *L.-C.* × *W. aurea*, two of the most beautiful and distinct hybrids; *L.-C.* × *callistoglossa* "Princess of Wales," a fine rose-tinted variety; *L.-C.* × *Hy. Greenwood superba*, *Cattleya* × *F. W. Wigan* (*Schilleriana* × *aurea*), a beautiful combination, in which the enlarged flowers have the rose-purple streaked lip resembling *C. Schilleriana*; *C. Trianae* "Katie Wigan" and *Lælia purpurata* "Ethel Grey," both charming light varieties; *Sobralia* × *Veitchi aurea*, *Zygo-cola* × *leopardinus* "Wigan's variety," and *Z.* × *Wiganianus*, *Cypripedium* × *Godefroyæ* "Wigan's variety," *Dendrobium* × *Leeana* *atropurpureum*, and several pretty species for which Botanical Certificates were awarded.

Of the *Odontoglossum* specialists, W. Thompson, Esq., Walton Grange, Stone, Stafford, exhibited many good things during the year, and obtained certificates for *Odontoglossum crispum* "Victoria Regina" and *O. c.* "The Earl," two fine spotted varieties; *O.* × *Rolfæ* "Walton Grange variety" and *O.* × *R. meleagris*, both illustrated in the *Gardeners' Chronicle*; *O.* × *Adrianæ* "Lord Roberts," and *O.* × *Lochristyense* "Kimberley." De B. Crawshaw, Esq., Rosefield, Sevenoaks, succeeded in verifying the parentage of *O.* × *Wattianum* *Crawshayanum*; his *O. crispum* aureum *Rosefieldense* may be said to be the first clear yellow form of the true and best type of *O. crispum*; *O.* × *Wendlandianum* *Crawshayanum* (*crinitum* × *crispum* Lehmanni), a charming novelty; *O. triumphans* "Raymond Crawshaw," a fine addition to the Rosefield series; *O.* × *Hallio-crispum*, and *O. luteo-purpureum* *Mossii*, both worthy varieties.

Norman C. Cookson, Esq., Oakwood, Wylam (gr., Mr. Wm. Murray), exhibited three of the best *Odontoglossums* of the year, in *O. crispum* *Cooksoni*, *O. c.* *Mundyanum*, and *O.* × *Andersonianum* *Cooksoni*; his *Phaius* × *Oakwoodensis* has surpassed his previously raised fine hybrid *Phaius*; *Cypripedium* × *Sanderiano-Curtisii* is a stately production; and at Oakwood, as with R. I. Measures, Esq., *Cypripedium* *insigne* *Sanderæ* has been raised true from seeds. H. T. Pitt, Esq., Roselyn, Stamford Hill (gr., Mr. Thurgood), who has a keen eye for a good thing, received certificates for the beautiful *Odontoglossum crispum* *Pittianum*, one of the best blotched forms of the *O. c.* *apiatum* class; *Cattleya* *Schroderæ* "Pitt's variety," a very extraordinary colour variation, the labellum being dark crimson-purple as in *C. Percivaliana*, and the petals rose coloured; *Cattleya* *Schilleriana* "Pitt's variety," a noble and distinct form; *Zygopetalum* *Burti* "Pitt's variety"; and among other achieve-

ments was one of the first to show *Lælia Jongheana* in its best condition.

Sir James Miller, Bart., Manderston, Duns (gr., Mr. J. Hamilton), while serving his country in South Africa, has had his gardens represented at several of the Royal Horticultural Society's meetings by new hybrid *Cattleyas* and *Lælio-Cattleyas*, of which the most distinct were *L.-C.* × *Lady Miller* (*C. granulosa* *Schofieldiana* × *L. cinnabarina*), *Lælia* × *Eveline* (*tenebrosa* × *præstans*), and *Cattleya* × *Bowringiana* *velutina*.

Mrs. Briggs-Bury, Bank House, Accrington, received awards at the Richmond show of the Royal Horticultural Society for two very handsome blotched *Odontoglossums*, viz. *O. crispum* "Duchess of Connaught," and *O. c.* "Empress of India," and since for the fine hybrid *Cattleya* × *illuminata*.

Jeremiah Colman, Esq., Gatton Park, showed *Odontoglossum Andersonianum* "Gatton Park variety," and *Lælia præstans gloriosa*, Elijah Ashworth Esq. (gr., Mr. Holbrook), had at the last Temple Show, *Odontoglossum* × *Adrianæ* "Ernest Ashworth," and *O.* × *A.* "Arthur Ashworth," two of the best of that pretty natural hybrid. Baron Sir H. Schroder, among other good *Odontoglossums*, showed *O.* × *elegans* "Eastwood Park variety," for which an award was given.

H. S. Leon, Esq., Bletchley Park, received awards for the handsome *Lælio-Cattleya* × *Fanny Leon*, and *Cattleya* × *H. S. Leon*, and showed other remarkable hybrids. W. M. Appleton, Esq., Weston-super-Mare, in *Cypripedium* × *Sir Redvers Buller*, and *C.* × *Phœbe*, produced two of the best of the year. Thos. Baxter, Esq., Morecambe, gave a real surprise with the remarkable *Odontoglossum crispum* "Oakfield Sunrise." John Leeman, Esq., Heaton Merey (gr., Mr. A. Edge), showed the richly-coloured *Cattleya Trianae* "West Bank House variety;" the violet and white *Zygopetalum Balli* appeared in the now distributed collection of G. S. Ball, Esq. J. Gurney Fowler, Esq., showed *Dendrobium nobile album*, *Cattleya intermedia* *Fowler's* variety, and *C. bicolor* *Glebeland's* variety. Henry Little, Esq., received an award for the white-petalled *Lælia purpurata* *Littleana*, and showed some exceptionally distinct forms of *Cattleya aurea*, and *C. Percivaliana*. R. I. Measures, Esq., Camberwell, among other new hybrid *Cypripediums*, had as the best *C.* × *Vidor*, and *C.* × *Chas. Rickman* "Ladymead variety;" and exhibited several interesting botanical species during the year.

F. W. Moore, Esq., from the Royal Botanic Gardens, Glasnevin, Dublin, the home of so many rare species, showed at the Royal Horticultural Society's meetings a large number of good things, of which the most distinct were *Masdevallia deorsa*, which flowered at Glasnevin first; *Odontoglossum coronarium* *Glasnevin* variety, with flowers almost wholly yellow; the rare *Odontoglossum cruentum*, *Cyrtopera plantaginea*, *Neobenthamia gracilis*, *Gongora nigrita*, *Zygopetalum Murryanum*, and other rare species.

Captain Holford's best was *Odontoglossum* × *Adrianæ* *Countess of Morley*; Walter Cobb, Esq., showed a fine thing in *Cypripedium Cobbæ*; Hubert J. Grogan, Esq., Worthing, with the richly coloured *Lælio-Cattleya* × *Lucasiana*; and various other amateurs produced novelties of more or less merit.

NURSERYMEN

were as usual headed by Messrs. Jas. Veitch & Sons, Chelsea, whose early work in the hybridist's art necessarily gave them the lead. From a long list of novelties of the year may be taken those to which Royal Horticultural Society's awards have been given. Of these, *Lælia* × *Edisa* (*anceps* × *purpurata*) is both remarkable and handsome; *L.* × *Mrs. Gratrix* (*superba*) brings a clear yellow form to the variable but always pretty hybrid; *Lælio-Cattleya* × *Rosalind* (*superba*), *L.-C.* × *Hyeana*, *L.-C.* × *Remula*, *L.-C.* × *Hermione*, *L.-C.* × *Cassiope major*, are showy flowers; *Cypripedium* × *Actæus* *Langleyensis*, *C.* × *Priam*, *C.* × *Lecanum* *Prospero*, *C.* × *J. G. Fowler*—all worthy

additions to a popular class; and *Epidendrum* × *Wallisio-ciliare* *superbum* and *E.* × *Clarissa*, both improvements.

Messrs. F. Sander & Co., St. Albans, have as their acknowledged best selection of the past year *Lælio* *Cattleya* × *Colmani*, one of the showiest;

Messrs. Charlesworth & Co., Heaton, Bradford, who seem to have thoroughly mastered the art of Orchid hybridisation, showed some very distinct things at various times, their most remarkable being *C.* × *Maudia*, which combines the features of its two parents, *C. callosum* *Sanderæ* and *C.*

and *P.* [× *Schilleriano-Stuartiana*, and received awards for them; and for the curious natural hybrid *Cymbidium* × *I'Ansoni*, *Lælia* *pumila* Bush Hill Park variety, *Cattleya* *Eldorado* *Enfieldensis*, and among other fine spotted *Odontoglossums* showed *O. crispum* *Britannia*.

Mr. H. A. Tracy, Twickenham, had at the Richmond show the chaste white *Cattleya* *Mendeli* *albena* "Princess of Wales," and later received award for the large-flowered *Lælio*-*Cattleya* × *elegans* *J. Davis*.

Other distinct things of the year were *Lælio*-*Cattleya* × *Gottoiana* Mrs. J. Douglas, *Odontoglossum* *crispum* "Maud Rochford," and many other new Orchids have been heard of which require time to develop.

CONTINENTAL NOVELTIES.

From his great establishments at Brussels and Moortbeke, M. Linden always has a flow of fine novelties, especially in *Odontoglossums* and *Cypripediums*, many of which have been shown in England during the year, those which found most favour being *Odontoglossum* *crispum* "Goliath," *O. c. radiosum*, *O. c. Confetti*, all worthy of their previously recorded compeers; *O. Ruckerianum* *rubiginosum*, a large flower with Indian-red markings; *Cypripedium* × *Schusterianum*, a large and distinct hybrid; and *C. insigne* *Chantini* *Lindeni*, a yellow and white form of the best type.

M. A. A. Peeters, Brussels, had at the last Temple show *Odontoglossum* *crispum* "Mrs. F. Peeters," very fine, and beautifully marked; *Lælio*-*Cattleya* × *Herode* (*C. O'Brieniana* × *L.-C.* × *elegans*), a pretty novelty; *L.-C.* × *Massangeana* (*L. tenebrosa* × *C. Schilleriana*), very distinct, and some other good things.

M. Chas. Vuylsteke showed two new varieties of his *Odontoglossum* × *Rolfeæ*; and M. Jules Hye had *Odontoglossum* *Souvenir de Victor Hye de Crom* (*Harryanum* × *luteo-purpureum*), *O.* × *Adrianæ* *Mascotte*, and *Lælio*-*Cattleya* × *General Baden-Powell* (*L. tenebrosa* × *C. Lawrenceana*). At the Paris Exhibition the continental raisers have exhibited a number of pretty things under new names (though a large proportion of them were probably derived from crosses already known and recorded in this country). Of those shown here, *Cattleya* *Dowiana* *Rosita*, an introduction of the late Mr. R. Pfau of Costa Rica to England, and which in some degree resembles *C.* × *Hardyana*, is the best. It was shown by M. Maron.

The following novelties and rare Orchids have been illustrated in the *Gardeners' Chronicle* in 1900:—

Cattleya *intermedia* *Aquinii*, February 10, p. 83,
Cypripedium × *Sir Redvers Buller*, January 20.

p. 43.

Cypripedium × *Sanderiano-Curtisii*, February 3,
p. 75.

Cypripedium × *Dora Crawshaw*, Nov. 24, p. 375.

Cypripedium *insigne* *Chantini* *Lindeni*, Dec. 8,
p. 411.

Dendrobium × *Dalhousie-nobile*, June 16, p. 379.

Dendrobium *Phalænopsis* (new forms), Sept. 29,
p. 241.

Dendrobium × *Venus*, August 4, p. 95.

Lælio - *Cattleya* × *Hy. Greenwood* *superba*,
July 21, p. 47.

Masdevallia *deorsa*, Lehm., December 1, p. 395.

Maxillaria *scurrilis*, Lehm., July 28, p. 65.

Miltonia *vexillaria* G. D. Owen, May 26, Supple-
ment.

Mormodes *Oberlanderianum*, Kranz, Nov. 3,
p. 318.

Odontoglossum *crispum* *Mundyanum*, Feb. 24,
p. 117.

Odontoglossum *crispum*, Oakfield Sunrise, Mar. 24,
p. 181.

Odontoglossum × *Hallio-crispum* *Crawshayanum*,
August 11, p. 102.

Odontoglossum × *Rolfeæ*, Walton Grange, June 30,
p. 415.

Odontoglossum × *Rolfeæ* *meleagris*, December 22,
p. 451.



FIG. 11.—CLEMATIS LANUGINOSA ON WALL AT CHADDLEWOOD, DEVON. (SEE P. 22.)

L.-C. × *Harold Morris*, pretty and distinct; *L.-C.* × *callistoglossa* *excelsa*, staged in several fine examples at the Temple show, a richly coloured, large flower; *Cattleya* *Mossia* "Our Queen," perhaps the finest of the "Reineckiana" class; and the St. Albans strain of *Epidendrum* *Endresio-Wallisii*, a fine type of such varying colouring that a large number of distinct varieties can be selected from it.

Lawrenceanum *Hyeanaum*; *C.* × "Dora Crawshaw" and *C.* × "Mary Beatrice" are very fine hybrids; *Sopbro*-*Lælia* × *Eros*, *Lælio*-*Cattleya* × *Sunray*, *L.-C.* × *Charlesworthi*, and other hybrids of *L. cinnabarina*, fine additions to the orange-scarlet section; and *Lycaste* × *G. S. Ball*, a desirable hybrid.

Messrs. Hugh Low & Co. have flowered two fine new hybrid *Phalænopsis* in *P.* × *Lady Rothschild*

Odontoglossum × *Wattianum* Crawshayanum, October 20, p. 286.
Odontoglossum *Wendlandianum* Crawshayanum, May 5, p. 275.
Odontoglossum *triumphans* Raymond Crawshay, April 7, p. 213.
Phaius × *Oakwoodiensis*, August 4, p. 93.
Phalaenopsis × *Schilleriano-Stuartiana*, Feb. 10, p. 83.
Sophrro-Lælia × *Marriottiana*, February 3, p. 66.
Zygopetalum *mystacinum*, January 27, p. 50.
Zygopetalum *Balli*, March 10, p. 149.

nearest ally will probably prove to be *Arundinaria racemosa*, a native also of the Himalayan range at similar altitudes. The small plant of *A. anceps* obtained for Kew five years ago is now 10 feet high, and spreads rapidly. *W. J. Bean, Arboretum, Kew.*

THE WEEK'S WORK.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. I. MEASURES, Esq., Cambridge Lodge, Flodden Road, Camberwell.

Cleaning the Glass.—In the neighbourhood of cities, and in the manufacturing districts generally, smoke and fog will have deposited substances on the roof-glass, which, if not removed, obstruct the light, and reduce thereby the vigour of the plants. At Camberwell, it becomes necessary to cleanse the roof and outside glass very often; for no matter how heavy the rainfall, the deposit is not removed unless the glass be scrubbed with a brush. We use a brush similar to that in use for cleaning railway carriages, to which a long handle is attached. Even cultivators in the country will find an advantage in thoroughly freeing the roof from deposits.

Dendrobiums.—The forward condition of some of the deciduous *Dendrobiums* will induce some persons to encouraging the growth of the plants; but it is prudent to wait before so doing till the days lengthen considerably. The plants should be maintained as far as is possible under normal conditions till the proper flowering season has arrived. The seed-vessels are ripening fast on various *Dendrobiums*, and so soon as the seed-vessels show signs of opening, a piece of tissue paper should be tied round them, in such a manner as to secure the seed as it falls; the least puff of wind from closing a door is sufficient to scatter them around. Plants in this condition, or carrying seed-vessels in a less advanced stage, should be placed at the warmer part of the house, and in such a position that the greatest amount of light may reach them. As soon as the seed is sufficiently matured that it may be easily shaken out of the seed-vessel, it is ready for being sown. In doing this act, distribute it thinly over the surface of a basket containing an established plant of *Dendrobium*, first removing decaying matter from the surface, and loosening it slightly; or fill some pans with finely-chopped bracken-roots, such as that discarded when picking over peat, and mix with it some small quantity of chopped peat fibre and a few finely-broken crocks, the pans being prepared a few days before use, and thoroughly wetted before the seed is sown. The chief care is in applying water, the seeds being very light, and easily carried away if water be afforded in the ordinary manner, while by dipping the pans they are easily floated off and lost. With good seed, germination takes place in about three weeks, the seed turning green, and beginning to increase in size, in which stage it is not so easily floated off; but it should still be carefully afforded water. Gently syringing with a fine nozzle is a good way of wetting the compost. The seed-pans should be put into a moist position of a house, and near the glass, in a temperature of 60° at night, and 65° by day.

Cypripediums.—The seed-vessels of these plants will be ripening fast, and the seed may be sown as soon as ripe and ready for dispersal. The seed-vessels may be removed and wrapped in paper if they are likely to burst, and hung in a warm, dry place for a few days. When sowing, select pots containing plants of the same genus which are well rooted, and that will not require re-potting for at the least one year. Before sowing the seed, do as was advised when sowing *Dendrobium*-seeds, and do not place the fingers on the compost, or it may become sour. After the plant has received an application of water, and it has drained away, let the seeds be sown; the same precautions in regard to water must be observed. Use rainwater in a tepid state. The contents of rainwater-tanks, unless a hot-water pipe passes through the water, are too cold at this season for affording any plants in a hothouse.

Calanthes.—Plants from which the flower-spikes are removed should be placed on a shelf in a position that will enable them to ripen thoroughly and begin their season of rest. The numerous crosses introduced of late afford us a variety of tints, many of them

very charming, and they form a marked improvement on the *C. vestita* and *C. Veitchii* sections. Although the plants will not require so much water at the root when the flower-spikes are removed, they must not become shrivelled entirely from lack of it, enough being afforded as will keep the pseudo-bulbs in a plump condition. Remove dead or decaying matter from the base of the pseudo-bulbs, and clear off scale and other pests which secrete themselves in the axils of the decayed leaves, using for the purpose a weak mixture of soft-soap and rain-water.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bicton, East Budleigh, Devonshire.

The Seed Order should be forthwith made out and despatched to the seedsman, so that he may get it before the busy time arrives. It may not be out of place to enumerate a few varieties which I have found to give a good supply. Among Peas, *Chelsea Gem* and *English Wonder* are two excellent dwarf Peas. *May Queen*, *Exonian*, *Gradus* (a grand Pea), *Criterion*, *Prodigy*, *Goldfinder*, *Chelstonian*, *Ne Plus Ultra*, *St. Duthus*, and *Autocrat* are Peas for anyone's garden. In French or Kidney Beans there are *Sion House Forcing*, *Ne Plus Ultra*, and *Canadian Wonder* (*Red Flageolet*); and of *Runner* varieties there are *Veitch's Mammoth* and *Sutton's Epicure* and the *Runner French Bean*. Improved *Longpod* is the best *Broad Bean* for the first crop, and *Green Windsor* forms a good succession in the summer. *Dell's Crimson* and *Cheltenham Green-top Beet* usually afford satisfaction. In *Brussels* there is a great choice of varieties, viz., *Michaelmas White*, *Autumn Self-protecting*, *Christmas White*, *Winter Mammoth*, *Vanguard*, *Spring* or *Early White*, *Dilcock's Bride*, *Leamington*, and *Late Queen* will yield a good return of *Cauliflowers*; there are extra early forcing—*Snowball*, *Walcheren*, and *Autumn Giant Cauliflower* have their merits; of *Celeries*, *Early Rose*, *Superb White*, *Colonel Clarke's Red*, and *Standard Bearer*; *Brussels Sprouts*, *Veitch's Exhibition* and *Sutton's Dwarf Gem* are both good in their way; in *Cabbage*, none is better than *Ellam's* for first crop, *Sutton's Little Gem*, and *Veitch's Main Crop*; *Savoy*s, the *Early Elm Dwarf*, *Green Curled*, and *Drum-head*, afford successional cuttings; of *Cucumbers*, choose *Rollisson's Telegraph*, *Lockie's Perfection*, and *Sutton's Every Day*, for growing under glass, and the *Long Ridge* for outdoors. The moss-curl and the broad-leaved *Batavian* are excellent *Endives*. The *Lyon* and *Dobbie's Champion Leek* are good varieties. Of *Cabbage-Lettuces* I favour *Perfect Gem*, *Sutton's Favourite*, *All the Year Round*, and *Lee's Hardy Green*; while in *Cos* varieties there are *Superb White*, *Mammoth White*, *Hick's Hardy White*, and *Brown Sugar-loaf*. *High-cross Hybrid*, *Hero of Lockinge*, and *Scarlet Gem*, are varieties of the *Melon* very satisfactory in frames and pits. *Veitch's Main Crop* and *Globe*, *Bedfordshire Champion*, *Giant Zittan*, *James' Keeping*, and *Rousham Park Hero*, with *Tripolis* for autumn sowing are excellent *Onions*. Improved *Hollow Crown* and *Student* are the best *Parsnips*. *Round seeded* and *pricklyseeded*, and *Monstrueux de Viroflay Spinach* should be grown. Of *Tomatoes*, *Challenger*, *Hackwood Park*, *Ham Green Favourite*, and *Laxton's Open Air*, are good, the last is suitable for outdoor culture, although most of them produce good returns outside. *Extra Early Melon*, *Snowball*, *Red Globe*, *Golden Ball*, and *Chirk Castle Blackstone Turnips* cannot be excelled, the last two being excellent keepers for use in the early spring months. *Moore's Vegetable-Cream* and *Long White Vegetable-Marrow* are free setters, with flesh of good quality. In the choice of *Potatoes* it is wisest to let each gardener make his own choice, the plant being fastidious in regard to soil. In the foregoing list it will be noted that in general standard varieties only are recommended, though I would advise gardeners to make tests of all novelties on a small scale, not depending, however, upon such a crop.

The Frame-ground.—In mild weather afford plenty of air to frames containing *Lettuces*, *Endives*, and *Cauliflowers*, removing the lights entirely if there is no rain or snow. Let decaying foliage be removed from the plants. In *Devonshire*, *Endive* is still growing in the open air, and keeping well; blanching being done by placing flower-pots over the plants, a piece of slate put over the hole

THE ORIGIN OF ARUNDINARIA ANCEPS.

At the time Mr. Freeman-Mitford published his valuable book on hardy Bamboos, now four-and-a-half years ago, nothing could be learnt as to the native country of this species. In *The Bamboo Garden* (p. 181), he describes it as "a lovely waif picked up at a sale of a dead nurseryman's effects by Mr. Jordan of Regent's Park. What was its birthplace, how it came here must remain a mystery; for the only man who could tell the tale is dead." I am now, I think, able to offer some information as to its native country, and its introduction to Britain. Some time ago, a member of the Kew staff, on visiting Orwell Park, near Ipswich, had a very handsome Bamboo pointed out to him by Canon Pretyma, and a piece of this was brought back to Kew. On comparing it with a specimen of *Arundinaria anceps* obtained from Mr. Jordan, I found that the two were identical. As I learnt that Canon Pretyma had grown it for at least twenty years, it seemed probable its origin might be traced through him, and on writing to him he was able to refer us to the gentleman by whom the seeds had been originally sent to England. This was Colonel Edmund Smyth, to whom belongs the credit of having added this fine Bamboo to English gardens. On enquiry being made from Kew to Col. Smyth, he very kindly wrote the reply (dated December 18, 1898), from which the following extracts have been made:—

"I sent home about 1865 a small sackful of seed to my father at Elkington, which had been collected in British Garhwal (north-west India), where I have seen the Bamboo growing at between 9000 to 10,000 feet altitude. We grew a great deal of it in the gardens and woods at my father's place (near Louth, Lincolnshire), and some we sent to Canon Pretyma and to various places; it is very hardy, and thrives everywhere. In a mild winter it retains its leaves, but loses them in a very severe frost. On the north slopes of the hills in British Garhwal it grows most luxuriantly, spreading a great deal, so that you see the whole side of a mountain covered with it; and it is very difficult to make one's way through it. It grows to a height of about 30 feet, and flowers and seeds at the end of twenty or twenty-five years, and then dies. It is most difficult to walk through after it has died; the canes are brittle and break off as you walk through them, leaving sharp spikes sticking up in every direction which are apt to run into you. It is one of at least three Bamboos on the Himalaya known to the natives as 'Ringal'."

Mr. W. H. Smyth, of Elkington Hall, where some of the original plants are growing, says that there it "grows to the height of 12 or 14 feet, and has never flowered, but spreads like *Twitch*."

Arundinaria anceps may be looked upon as one of the most useful of hardy Bamboos. As will be seen above, it is by no means a new plant, and has stood the test of thirty-five years' cultivation in various parts of the country. It is now offered by dealers who make a specialty of Bamboos. The culms are purplish when young, afterwards brown. In the main they are smooth, but frequently in the older ones, the surface is rough just beneath the nodes; the foliage is charmingly luxuriant, on stems two or more years old, the leaves being from 2 to 5 inches long, $\frac{1}{4}$ to $\frac{1}{2}$ inch wide, and of a vivid green. Among other introduced Bamboos its

excluding sunlight. If frost should set in, the plants will be removed to a late Peach-house, and brought into the cooler part of the Mushroom-house, in batches as required.

Forcing.—Place Rhubarb-roots in the Mushroom or other similar warm house or shed; but where practicable, half-a-dozen crowns of Rhubarb may be forced in the open by covering them with Seakale or other large-sized pots or boxes, and covering them to the depth of 2 feet with fermenting stable-litter and leaves, carefully guarding against overheating them.

Root Stores should be examined on days when the men cannot work out-of-doors. Potato-sets of middle size selected for planting should be laid out fairly thin in a place free of danger from frost.

THE HARDY FRUIT GARDEN.

By C. HERRIN.

Pruning of Trees and Bushes.—Where alterations and additional planting have been carried out, or where there has been no change, the pruning, dressing, nailing, or tying and training of fruit trees generally should now occupy a considerable portion of the cultivator's attention, and all spells of mild weather should be utilised in this kind of work. The wall trees should be the first to receive attention, Pears being first taken; indeed, the pruning and fastening of Pears should be undertaken as soon as the leaves fall. Where much of the work remains to be done, no time should be lost, Pears especially.

Horizontal and Fan-trained Trees.—Assuming that summer pruning was properly carried out, the chief operation will consist of shortening the longer shoots to two or three basal buds, and the leading or extension ones more or less according to their strength. If the trees are young, and the wall-space to be covered is considerable, strong leading shoots need not to be much shortened, 2 feet or more in length may be left, the cut being made at a plump bud situate on the upper side of the shoot, and pointing in the direction it is desired the new growth should take. Cut to one or two buds only all weak shoots. The central shoot should be shortened to three buds, these producing one leader and two lateral shoots. These lateral shoots should correspond in distance from the last formed pair, with the space between other branches. Aged Pear-trees on which the fruit-spurs have extended far from the wall or trellis, should be cut back to a snag 2 inches in length. These snags will push forth shoots in the course of the summer, of which one or two of the stronger should be selected for forming fruit-spurs, and the rest should be removed entirely. If most of the spurs on a tree are too long, do not shorten back more than one-third. The earlier in the season that this kind of pruning is done, the greater the probability of the old wood forming a new break early in the summer. Sometimes the spurs are too many, and require thinning. Aged horizontally-trained trees may be rejuvenated by encouraging shoots along the lower tiers of branches, leaving these young shoots at about 9 inches apart, and laying them in vertically, the old tiers of branches above them being removed as soon as the new shoots require more space.

Cordon Trees should receive almost similar treatment to that accorded the dwarf-trained ones. If the wall space permits further extension, the leading shoot should be shortened to about 1 foot, and the spurs thinned where necessary. Aged trees should be encouraged to make a growth from the base, which should be taken up, and the old one eventually removed.

Cleaning the Trees.—Pruning completed, the trees should receive a dressing of some kind, even when not infested with scale or other insect pests. If moss or lichen-covered, scrub the stem and branches, and apply the caustic-soda and potash mixture often mentioned in these columns. These materials may now be obtained prepared ready for use of the horticultural sundriesmen or chemists. The strength at which it may be used on Pear-trees is 1 lb. of caustic-soda and 1 lb. crude commercial potash to 10 gallons of soft-water; first dissolve the quantity desired to use in a wooden pail half filled with warm, soft water, and then add to the remainder of the water, and use at a temperature of 100° to 120°. A sprayer should be used of the "Abol" type for applying this mixture, in order to prevent waste. When applied at this strength, I have found no injury result from a

little running over the hands of the operator, but where a great number of trees have to be dressed, leather or rubber gloves should be worn. A bright and healthy appearance of the bark is the result of this application; and the wash being thin, it gets into all crevices, and destroys insects, eggs, and pupæ.

FRUITS UNDER GLASS.

By MALCOLM MCINTYRE, Gardener to Sir CHAS. TENNANT, The Glen, Innerleithen, Peeblesshire.

The Earliest Vinery.—Severe frost and dull weather together render great care necessary in early forcing in avoiding checks to growth by the improper ventilation of the houses, and in particular after a dull, cold period air must be sparingly admitted. In affording water to the borders, the water should be of the same temperature as that of the air of the vinery. Now that the roots are beginning to move, weak liquid-manure may be applied, but before so doing test the border with Kirk's Vine Border Tester. This tool is made in the form of a cheese-gouge, and by its use it is an easy matter to ascertain if the border lacks water or if it be sufficiently moist. If the heat in the fermenting material is declining, apply some of the prepared stable-manure and leaves, which should always be kept on hand. Allow not more than one shoot to grow from each spur, and in dis-budding leave the strongest and most prominent buds. Begin to tie the laterals to the wires before the leaves touch the glass, performing the operation with much care, so as to avoid breaking them. It is usual to stop the shoots at the second joint above a bunch if the Vines are strong and making good foliage, but if they are weak and the foliage small, stop them at the third or fourth joint. Do not overcrowd the laterals, as a good spread of foliage encourages root-action, and it is essential that the former should be well developed. Remove superfluous bunches as soon as the best can be selected, which will afford a better set on those that remain. Afford a night temperature of 55° to 60°, when the flowers are opening 70° to 75°, and during the day keep the air slightly drier.

Vines in Pots.—Those which were started with bottom-heat in the month of November may now have the laterals tied down and stopped. The earliest varieties will be coming into flower, at which stage raise the temperature from 60° to 65° at night, and by day from 70° to 75°, and allow it for a short time to run up to 80° when the sun breaks out, as it often does in frosty weather. The syringing of the Vines will now be stopped, but damping the walls and moistening the surface of the beds must still be practised, otherwise the incessant fire-heat will soon cause the delicate organs of the flower to shrivel up and spoil the setting. Fertilisation should be encouraged by a higher temperature and a moderately moist, buoyant atmosphere. Fertilise either with a camel-hair brush or rabbit's tail, using the Hamburg pollen if obtainable. As soon as a good set is obtained, reduce the number of the bunches according to the state of the Vines. Six is a sufficient number. Thin as soon as the berries are the size of swanshot. Feeding must now be resorted to, very mildly at first; tie-in the leading laterals. The more foliage the more roots, and active roots must be plentiful if pot Vines are to do credit to the grower. Attend to keeping up the bottom-heat, adding fresh material as soon as it shows signs of declining. When the bunches are thinned, the temperature may in bad weather return to 60°, but no fixed figure can be insisted on.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HUSSEY PACE, Esq., J.P., Prestwood Hall, Loughborough.

The Rose House.—The progress of plants under glass has, owing to the lack of light and absence of natural warmth, been much retarded during the last two months. This is, however, better for the plants than a weak spindly growth of shoots induced by the use of fire-heat, with its consequent weak flower-buds. With more sunlight good growth may be looked for, and fire-heat may be used with useful effect. An equable temperature of 50° at night and 55° during the day should be maintained, allowing 10° more with sun-heat. At this season the syringing of the plants may only be practised in fine weather, at 9 A.M., and then only take the form of very slight dewing. Ventilation, if required at all, should be applied only at the

apex of the roof. Water should be afforded in the mornings, and all moisture dissipated or mopped up before nightfall. Successional batches of plants in pots in frames should have the pots secured against frost by means of tree-leaves or stable litter, so that they will be in a proper state for planting in the forcing-house when required.

Hippeastrums (Amaryllis).—The usual time of flowering of these bulbs is during the months of February and March; but this season some of ours were in flower at Christmas time, and some bulbs are throwing up vigorous bloom-spikes at the present time. It will be prudent to examine the bulbs, and introduce into a temperature of 60° minimum, and 65° maximum, those which are pushing up flowers. At this stage, weak liquid-manure or soot-water may be afforded. Repotting may take place after flowering is over. The usual course of treatment has been to repot the bulbs previous to starting them into growth, a practice that should be adopted with the late batches of plants. In repotting, shake off the exhausted soil from the bulb, and in repotting employ a mixture consisting of loam, leaf-mould, and peat $\frac{1}{2}$, together with $\frac{1}{4}$ sharp sand, charcoal, and fine mortar-rubble. Let the pots be plunged into a bed having a lasting heat of 75°. The house or pit should be efficiently heated, so that a temperature of 55° can be easily kept up by day, and 5° less at night. Let the syringe be used daily twice or thrice, but until there are signs of active growth no water should be applied to the soil. In order to retard the later batch of plants, keep them in a temperature of 45°, and pot them in about four weeks from this date. Sow *Hippeastrum* seed in pans, placing these in a temperature of 65° by night, and 75° by day, and shading the soil from sunshine till germination has taken place.

Tree Carnations, &c.—Select the smaller side-shoots, and insert them in small 48's, to the number of eight or ten in a pot; plunge in a bottom heat of 75° to 80° in a frame or propagating-house. Afford them a slight syringing in the mornings, and tilt the lights of the frame a little at night, to prevent damping off. Aged plants of *Eranthemum*, *Euphorbia Jacquinæiflora*, and *Plumbago rosea* may be cut back as they go out of flower, the resulting young shoots being used for propagating purposes.

THE FLOWER GARDEN.

By T. H. SLADE, Gardener to Lord POLTIMORE, Poltimore Park, Exeter.

Delphiniums and Scabious.—These plants are so beautiful when in bloom that it is a matter for surprise they are not more often met with in gardens. Delphiniums have been much improved in colour and habit, so that the plants are very effective in the border when massed, the tall-branching section at the back of the border, with *Emperor* and the dwarf varieties in the front. Borders of these plants have been much admired here during the last two seasons. Scabious give plenty of bloom. Autumn-sown plants of both should be thinned out to remain where sown, or transplanted to other quarters they will flower early. Pyrethrums are also useful plants to furnish cut flowers, and may be planted in the mixed borders in moderate numbers, although the bulk of the plants should have a border or bed to themselves. Place a shovelful of coal-ashes over the crowns to deter slugs from eating the young growth.

Pæonies.—Tree or Moutan varieties may still be planted if wanted to flower this year; good varieties are *Apollo*, *Sublimis*, *Lord Byron*, *Punica*, *Beauty*, and *Magnificent*. Pæonies make attractive objects when in flower, either isolated on the grass, or in sufficiently open spaces in the shrub-beries. Afford a mulching of manure to established plants, and one of litter to those newly planted. Pæonies, if planted in the wild garden, should be afforded some protection against rabbits at the first, or these rodents will play havoc with the buds and leaves. Herbaceous Pæonies may be planted at a later part of the season, and they should not be weakened by dividing the clumps over much. The following are pleasing varieties:—*Miss Brice*, *Miss Salway*, *Lady Gwendolin Cecil*, *Olivia*, *Torquemada*, *Mountebank*, *Queen Victoria*, *Lady A. Macduff*, and *Glory of Somerset*.

Rosary.—Complete the planting of all Roses, and mulch the beds with half-rotten manure. Attend to the staking of large bushes and all standards, and make long shoots secure on walls and trellises.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	JAN. 14	{ United Horticultural, Benefit and Provident Society Special Meeting.
TUESDAY,	JAN. 15	{ Royal Horticultural Society Com- mittees.
THURSDAY,	JAN. 17	{ Linnean Society Meeting. Botanical Society Meeting.

SALES.

MONDAY, JAN. 14.—Border Plants, Dutch Bulbs, Lilies, Blackberries, Roses, Lily of the Valley, &c., at Protheroe & Morris' Rooms.

WEDNESDAY, JAN. 16.—Japanese Lilies, Palms, and Decorative Plants; Roses, Tuberoses, and Palm Seeds, at Protheroe & Morris' Rooms.

FRIDAY, JAN. 18.—Imported and Established Orchids, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—36° 7'.

A TUAL TEMPERATURES:—

LONDON.—January 9 (6 P.M.): Max. 45°; Min. 27°.

January 10.—Mist, thaw after snowfall.

PROVINCES.—January 9 (6 P.M.): Max. 47°, Southern Counties; Min., 32°, North-east Scotland.

Horticulture from an Educational Standpoint.

THE following is a summary from a very interesting article on the importance of horticulture as a factor in education by Mr. F. W.

CARD in the thirteenth annual report of the Rhode Island Experiment Station, just issued.

Education, like many other things, is undergoing a process of evolution. Its field is constantly broadening, and new subjects are crowding for recognition. In this process of evolution and re-adjustment, the subject of Horticulture has not yet received the recognition which it deserves. It may be said to be one of the newer claimants for a position in the educational curriculum. The reasons which give it value may therefore be examined with profit. Horticulture embraces numerous lines of work, such as vegetable-gardening, fruit-growing, floriculture, ornamental gardening, &c. In the main it is a calling in which women as well as men may engage. Parts of its work may be too heavy for a woman's strength; but nearly every business develops to a greater extent than can be managed by one person. It is obvious that the kind of assistance most easily obtained, and which costs least in the labour-market, is muscle and brawn, hence women need not hesitate because parts of the labour are too hard. To establish a manufacturing industry much capital and an extensive plant, with a large output, are needed to insure success, but most lines of horticulture may be undertaken with very modest capital, and be developed as the business grows and the trade warrants. Often, too, horticultural work may be combined with other lines, or with another calling, such as poultry-raising, bee-keeping, &c.

In vegetable-gardening there is perhaps most competition, yet even in this field there are often opportunities for special products which will yield good returns; particularly is this true in the growing of vegetables under glass.

Floriculture offers a line suited to the tastes of many. This may be conducted chiefly as a wholesale, or as a retail business; the first requiring considerable capital, while the latter may be begun with little. Here the competition is often keen, but in what calling is this not true? Nursery-work and the growing of ornamental and flowering plants afford remuneration to large numbers of people.

To many, fruit-growing appeals more strongly than either of the lines already mentioned. Distant from market, with cheap lands, the larger fruits like Apples and Pears may prove most profitable; while with fewer acres and better markets, the smaller fruits which require less room may receive attention.

In the former situation the Apple is one of the most available and trustworthy of fruits. Caution is needed, not to be dazzled by the almost fabulous returns now and then received from an orchard or from a plantation of small fruits. These are the exceptions, attained only under peculiar conditions, and commonly only by the men who have given long study to the subject, and who have become experts in their special line. Discouragements are numerous, the enemies to combat are many, and only the man or woman with skill, judgment, and business ability need hope to make a pronounced success. Yet to one who will give it thought, study, and attention, it affords a congenial field of employment, with most of the comforts, many of the luxuries, and a reasonable share of the emoluments of life.

That horticulture affords a means of obtaining a livelihood is a reason for giving it a place in education, which will appeal only to the few; but its study may have value to others as part of a general education. In the garden a vacation for an hour can be had at any time, and its influence may be most beneficial.

Another reason why horticulture may possess educational value is, that it trains the faculty of observation. The professional horticulturist or the amateur who endeavours to select the most desirable forms of a given plant, and from them to breed up a superior strain, must exercise keen observation in order to carry the undertaking to a successful issue.

Forestry is so closely related to horticulture that it may properly be mentioned in this connection. One of the chief problems in its study is that of the influence of forests upon climate and rainfall. In such a study, the student learns that the water-power of a stream, the agricultural well-being of the lands within its valley, and the health of the residents who rely upon that stream as a source of water-supply, depend largely upon the forest conditions of its water-shed.

Apart from the economic value of the material which the forest furnishes, it is of importance, therefore, to the manufacturer as a source of power, to the farmer and gardener as a source of fertility and moisture, and to the health of all in maintaining purity of water-supply.

Summing up the arguments, the author says: horticulture demands recognition in the educational field for the following reasons:—

1. It affords a means of a livelihood, among congenial and ennobling surroundings, with a liberal share of the best things of life.

2. It affords recreation, particularly to those whose brains grow weary in other lines of work.

3. It trains the faculty of observation.

4. A wider knowledge of it would help in the solution of some of the sociological problems of the day.

5. It gives power to man in the development of new forms of plant life.

6. It contributes to culture and breadth of mental vision, the highest result of educational training.

The Chrysanthemum Rust.

WE see it stated in *Müller's Gärtner Zeitung* for December 15

last, that an article of considerable length by Dr. ERNST JACKY, of the botanical section of the Royal Pomological Research Station at Proskau, was published on this subject in the *Zeitschrift für Pflanzenkrankheiten* (Dr. PAUL SORAUER, Editor). This notice of the Rust gives the history, first appearance, spread, development, and means of destroying the fungus—*Puccinia Chrysanthemi*. Mr. MASSEE's illustrated article on this subject appeared in our columns on October 8, 1898, under the name *Puccinia hieracii*.

The rust seems to have been observed in England in 1895, still it is quite probable that it appeared earlier, but was not observed. The assumption that the fungus came to England in the first instance from Japan with some novelties is very feasible, but cannot be supported with certainty. According to Prof. MIYOSHI, of Tokio, the rust is well known, and very abundant upon cultivated Chrysanthemums in Japan, which is contrary to the statement in the *Gardeners' Chronicle*, according to which the disease is unknown in the home of the Chrysanthemum.

In 1897, the disease appeared on the continent, particularly in Germany, and in France (vide, *Bulletin de la Société Mycologique de France*, vol. xvii, No. 2, pp. 76–80); where, according to M. ROZE, it also appeared in the same year. In September, Prof. SORAUER informed Dr. JACKY that the rust had in the last few years spread with remarkable rapidity (in Germany) amongst Chrysanthemums; and, so far as he could learn, it had been brought in with English novelties.

Dr. JACKY assumed at the outset that the rust was identical with *Puccinia Tanacetii*, or with *P. Balsamita*, and he thereupon endeavoured to prove the identity by inoculating the following plants with the Chrysanthemum-rust, viz., *C. indicum*, *C. frutescens*, *C. leucanthemum*, *Tanacetum Balsamita*, *T. vulgare*, and *Artemisia campestris*. After the lapse of a period of time sufficient for the development of the fungus, the rust-disease appeared only on one of these plants, viz., Chrysanthemum indicum, all of the other plants being free from the rust, as well as the not inoculated control plants. It is, therefore, through this and other later experiments that evidence has been procured that the Chrysanthemum-rust is only to be found on *C. indicum*, and not on any of the other species of plants named; and according to the researches of other persons it is not apparent on *Hieracium aurantiacum*, and *Taraxacum officinale*. According to Dr. JACKY's observations, the development of the rust has been solely in the *Uredo* stage, and teleutospores (resting spores) were not formed, but two-celled uredospores. In conclusion, it may be mentioned that the uredospores require a proportionately long period (three to four weeks) of incubation to form a new colony. The *Puccinia Chrysanthemi* appears on the continent in the *Uredo* stage, viz., by means of the summer spores, which is the most rapid mode possible

of distribution; and they attack mostly the plants which are grown under glass, whilst the less tender plants standing in the open air escape.

M. ROZE ascertained that the young shoots that commonly spring from the root-stock in the autumn, become infected by the rust found on the old leaves of the plant, are then commonly employed as cuttings, and wintered under glass.

These young plants are in a suitable condition to disseminate the fungus still further.

This cultivator believed that the uredospores on dead leaves of the Chrysanthemum in the open air are not capable of withstanding the cold of winter, but that they perish; and as a consequence there is no further development of the rust occurs, or is to be feared on branches and foliage thrown to the rubbish-heap, &c., or on plants growing in the open air.

Dr. JACKY was entirely in accord with the late M. ROZE's statement, excepting in the matter of the over-wintering of the uredospores in the open air; and he succeeded in showing that the uredospores are capable of passing the rigours of winter unharmed, even when exposed to a temperature of -25° Celsius, a microscopical inspection of such exposed spores showing that most of them were completely healthy, and capable of reproduction, whilst a few had been destroyed by various saprophytic fungi. Telenospores could not be experimented upon on this occasion. Experiments of another nature seemed to show that infection was to be feared from material standing in the open air over the winter, such as growing shoots, &c.

Dr. JACKY, as the result of his investigations gives the following rules to be observed in combating the foe:—

- (1.) Avoid using cuttings of Chrysanthemums from infected sources; and in cases where the fungus has already appeared.
- (2.) Remove carefully and destroy by burning every diseased leaf.
- (3.) Badly infected plants should be destroyed by fire.
- (4.) Slightly affected plants should be isolated.
- (5.) And the young shoots coming from the roots should not be employed as cuttings the next year.

Many remedies are advised for the disease, but hitherto the most efficient has been the Bordeaux Mixture.

According to Dr. JACKY, the fungus is more destructive in the dry air of a room than in that of a moist greenhouse.

GUNNERAS (see Supplementary Illustration).—There is something about Gunneras that is suggestive of pantomimes! Their stately habit and gigantic leaves suggest troops of fairies hiding from the wicked gnomes in the deep recesses of the wood. Our present illustration was forwarded to us by Mr. BURBIDGE, and represents a plant with leaves 8 feet 6 inches across, growing in co. Kildare, at Straffan, a garden of whose treasures we hope shortly to speak more at length. These majestic plants are natives of South America, New Zealand, and some of the South Sea Islands. In this country they are hardy, and thrive in rich, deep, moist soil. As specimen plants they are magnificent, but they are hardly adapted for a suburban back garden. They are easily propagated by division. The reddish flowers are very numerous, in dense spindle-shaped spikes, some 2 feet in height. Of the two species commonly cultivated, *G. manicata* is the better. Its leaf-stalks are spiny, often 5 to 6 feet in length, the leaves 10 to 12 feet across. *G. scabra* is rather less in size and less spiny. GUNNER was a Swedish

bishop with botanical tastes; he died in 1773. That so gigantic a plant should be a member of the same family, Haloragaceæ, that includes the Callitriche and the Mare's Tail (*Hippuris*) shows the fallacy of trusting to external appearances. Gunnera manicata, André, was introduced by M. LINDEN from New Granada about 1863, and was described by M. ED. ANDRÉ in the *Illustration Horticole* (1873), p. 156. The name manicata refers to the sleeve-like appearance of the leaf-stalks, which form as it were a sheath surrounding the central bud.

OUR ALMANAC.—We are requested to state that members of the trade, and secretaries of horticultural societies who may desire to receive a gratis copy on card of our Almanac should make immediate application to the Publisher, as the supply is nearly exhausted. Those desirous of receiving a larger number of copies are requested to remit the cost of transmission by parcel post.

TUESDAY, JANUARY 15, will be a busy day at and about the Royal Horticultural Society. In addition to the fortnightly exhibition, there will be meetings of the Council, of the Fruit, the Floral, the Orchid, and of the Scientific Committees respectively. There will be two Committee meetings connected with the National Rose Society, a meeting of the Lindley Library Trustees, and one of the Veitch Memorial Trust. The members will have earned their dinner at the Horticultural Club in the evening.

ROYAL HORTICULTURAL SOCIETY.—The first meeting of the committees of the Royal Horticultural Society in 1901 will be held as usual in the Drill Hall, Buckingham Gate, Westminster, on Tuesday next, January 15. A paper on "Recent Developments in the Treatment of Diseases, and Insects injurious to Orchard Crops," by Professor BEACH, U.S.A., will be read at 3 o'clock. The Scientific Committee will meet at 4 P.M. To prevent misunderstanding, it may be mentioned that the committees of 1900 do not vacate office until the date of the annual meeting 1901, and in like manner all Fellows' tickets of 1900 are available until February 12, 1901.

THE KEW GUILD.—We are pleased to receive a copy of the *Journal* dated November, 1900. It is so interesting a record of the doings of present and past Kewites, that we look forward with pleasurable anticipation to its issue. To the present issue is prefixed a portrait of HERMANN WENDLAND. We hope to have another opportunity to advert to the contents of this number.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—We may remind our readers that the annual general meeting for the election of pensioners will be held at "Simpson's," in the Strand, on Tuesday, January 22, at 3 P.M., and the friendly supper at 6 P.M.

MR. SAMUEL HEATON, formerly the Secretary of the Isle of Wight Horticultural Association, has been appointed Horticultural Instructor by the Oxfordshire County Council.

REV. H. EWBANK.—The last volume of the *Garden* is dedicated to this gentleman, of whom a portrait is given in the number for Dec. 29, 1900.

NON-SEXUAL PROPAGATION OF OPUNTIA.—Professor TOUMEY, in an article in the *Botanical Gazette* (American), speaks in general terms of the use of spines as aids in dissemination of *Opuntias*, which are dispersed by the breaking off of the separate joints. A short note may be added as to the function of these spines, especially in such long-spined species as *O. fulgida*, Engelm. A joint falling upon the sand very often rebounds from the elasticity of the spines, and by this impetus is carried some distance from the parent plant. The greatest aid, however, is in the placing of the joint. Joints destined for such dissemination are, as a rule, obovate, the best-developed areolæ with the largest spines being situated on the distal end, those of the proximal end being scarcely at all armed. The result of this is, that the joint upon falling almost invariably alights with its base downward, in the

best possible position for striking root. The distal parts are kept off the ground in all cases by the long spines. Carleton F. Preston, *Harvard University*, in "*Botanical Gazette*."

NATAL PLANTS.—It is gratifying to note the appearance in the past year of trouble, of two parts of Mr. MEDLEY WOOD's work. It consists of a series of lithographic plates of native plants, accompanied by descriptive letter-press. Plate 206 is devoted to the illustration of *Kniphofia multiflora*, from which it would seem that it has improved under cultivation, and is a handsomer plant than the plate would indicate. The second part of the second volume is entirely devoted to grasses. When the difficulties that beset the preparation and publication of such a work in a far off colony are taken into consideration, it becomes a subject of wonder that Mr. MEDLEY WOOD should be able to produce a work of such importance.

"ICONES SELECTÆ HORTI THENENSIS."—The first volume of this publication is now completed by the issue of the eighth fascicle. It is devoted to the illustration and scientific description of plants cultivated in the garden of M. VAN DEN BOSSCHE at Tirlemont, in Belgium. The plants figured and described in the present part are *Myrtus ilicifolia*, a Holly-like shrub, which was derived from Mr. T. SMITH's nursery at Newry, and which are now bearing fruit in M. VAN DEN BOSSCHE's house; *Prunus Maackii*, a Manchurian species of the *Padus* section; *Tristania conferta*, a curious Myrtaceous plant with white flowers, stalked, rounded petals, and five stamens, each of which branches into a great number of filaments. It is a native of Australia. *Burchellia bubalina* is our old friend *B. capensis*, which it seems was the second name the plant received. It is a warm-house shrub with orange-coloured tubular flowers, not often seen out of botanic gardens. *Leucothoe recurva*, a species which produces its flowers on the shoots of the year. The illustrations are excellent, and the accurate botanical descriptions are the work of M. LE WILDEMAN.

"HORTUS THENENSIS."—M. VAN DEN BOSSCHE has published the first instalment of a new edition of his Catalogue of species cultivated in his garden at Tirlemont. The present part contains the *Polypetalæ*. The species are enumerated in order, with references to the name of the author, the date and place of publication, and the synonymy. To collectors desirous of identifying their plants, this index will prove very useful.

IPSWICH AND EAST OF ENGLAND HORTICULTURAL SOCIETY.—The annual meeting was held at the Town Hall on December 27, when there was a very good attendance, with a good balance in hand. The next shows are fixed for July 3 and November 12 and 13.

"REVUE HORTICOLE."—As we have already mentioned, this eminent French publication has been slightly increased in size, a circumstance that librarians will hardly appreciate. The *Revue* was established seventy-two years ago. A statement prefixed to the issue for January 1, gives some interesting details concerning its history. The first editors were POITEAU and VILMORIN, from 1829 to 1837; DECAISNE, NEUMANN, and PÉPIN followed; DECAISNE's editorship ceased in 1856, the great botanist and pomologist being succeeded by BARRAL. CARRIÈRE held the editorship from 1867 to 1881, after which year, and until 1896, he was associated with ED. ANDRÉ. From 1897 to 1900 the *Revue* has been edited with great success by the last-named gentleman. The *Revue* formed originally a part of another famous periodical, the *Bon Jardinier*, but was made a separate publication in 1829. Thanks to the collaboration of such men as DECAISNE, NAUDIN, the VILMORINS, VERLOT, HOULLET, PÉPIN, and most of the principal French gardeners, the *Revue Horticole* has always maintained a foremost place among horticultural journals—a place it is not likely to lose under its present direction.

"LA SEMAINE HORTICOLE" takes a year's rest from the present time. Many will say with us, *Au revoir!* In the last number are portraits of some of the principal contributors, including that of M. LINDEN, the founder; and of M. RODIGAS, one of the Directors of the Ghent School of Horticulture, and one of the most prolific writers on horticultural subjects for many years past. The same number contains an illustration of a house devoted to the culture of various species and hybrid varieties of *Hemanthus*, at Linthout, to which we referred on a recent occasion.

THE WEATHER IN EAST KENT.—A correspondent residing near Ashford writes:—"The weather is exceedingly cold in this part, 6° of frost being recorded on the morning of the 4th inst., and on Saturday there were 10° with a north-east wind blowing, which continued to blow the whole of Sunday, when 10° of frost was registered; and on Monday morning 14°. Snow covered the ground. On Tuesday the thermometer indicated 20° of cold, and a severe snowstorm broke over the country in the early hours of the morning, and snow was still falling heavily at 6 P.M. The roads are almost impassable for pedestrians.

HORTICULTURE IN THE ISLE OF WIGHT DURING THE PAST SEVEN YEARS.—In connection with the County Technical Instruction Committee of the Isle of Wight County Council, over 800 lectures have been given and 300 practical demonstrations during the past seven years. A county experimental garden has been established, where trials of varieties of produce, methods of manuring, &c., will be made, and where practical demonstrations in the various gardening operations will be given from time to time. The Isle of Wight Horticultural Improvement Association and the East and West Cowes Horticultural Improvement Societies have been established, and have now a total membership of over 600. In 1893 there were ten shows in the island, whilst last year there were twenty. There has been a great increase in the number of allotment and market gardens, also in the number of cottagers' and amateurs' greenhouses. School-gardens have been established by Mr. T. G. ROOPER, M.A., the highly respected Inspector of Day Schools. Many new varieties of fruits, flowers, and vegetables have been raised by Island gardeners, some of which are indispensable to the up-to-date exhibitor. Last, but not least, is the Press, which has rendered every possible aid to promote horticulture in all parts of the Garden Isle.

BRUSSELS.—The establishment of a Zoological Garden, with a "Palm-garden," winter-garden, restaurant, and other attractions, is proposed. The Marquis DE WAVRIN is the President, M. LUCIEN LINDEN, whose appetite for work is colossal, is Vice-President; and M. G. BRANDNER, Secretary.

COLLETIA CRUCIATA.—From Mr. BURBIDGE, of the Trinity College Botanic Garden, Dublin, we have received a specimen of this very curious shrub in full bloom. On showing it casually to some friends who were unacquainted with it, one said it was Butcher's Broom, another said Holly, and indeed there is a superficial resemblance to both. To us, editorially, it is a reminder that editors are by no means infallible, and that we ought to be humble accordingly. This is how the case stands: One BARNES of Bicton, a very famous gardener in his day, once said that this plant, then known as *C. bictonensis*, was identical with *C. spinosa*. Marked was the displeasure of the great Doctor then editing the *Gardeners' Chronicle*, and strong were his views as to the intelligence of a correspondent who could imagine that two such different-looking things could be derived from the same seed. Alas! even editors should not be too positive. The two forms have been raised from the same seed; and what is more, the two forms have been seen growing on the same branch. Those interested in the variation of plants may see the

illustration on p. 243 of our issue for Feb. 23, 1878. To lovers of curious plants this may be recommended, and even the æsthetic gardeners will admire its sturdy, uncompromising growth, and its cheerful white flowers. Unfortunately, it is not quite hardy. After growing it for many years near to a wall, we ultimately lost it in one of the grand winters some ten years ago. Now-a-days we are not satisfied—at least, no one ought to be satisfied—until we know the how, why and wherefore of so curious a formation. At present all we can say is, that it forms a most formidable protection against marauders.

STOCK-TAKING: DECEMBER.—The year has closed, just as it began, with wars on hand, and with rumours of war, just to keep up the excitement; it has closed, not showing weakness or a tendency to degeneracy, and so we look forward to the work of the year now begun its course with confidence and trust. We can see how 1900 "went out" by a glance at the figures of the Trade and Navigation Returns for December, just noting that the Revenue Returns show an astonishing elasticity in trade and revenue resources. The imports for the month show an increase of £5,707,766 as compared with the same period in the preceding year, the figures being:—1899, £40,738,896; 1900, £46,446,662. The following are the usual excerpts from the "summary table":—

IMPORTS.	1899.	1900.	Difference.
	£	£	£
Total value ...	40,738,896	46,446,662	+5,707,766
(A.) Articles of food and drink—duty free... ..	14,306,872	16,030,453	+1,723,581
(B.) Articles of food & drink—dutiable	2,261,477	2,321,960	+60,483
Raw materials for textile manufactures	6,645,632	9,466,661	+2,821,029
Raw materials for sundry industries and manufactures	4,354,849	4,123,788	-231,061
(A.) Miscellaneous articles	1,446,372	1,598,029	+151,657
(B.) Parcel Post ...	75,399	52,863	-22,536

The largest increase is to be found in raw materials for textiles, £2,821,029; food and drink, duty paid, show an increase of £1,723,581; whilst manufactured articles record an increase of £627,754. Fruits, roots, and vegetables, have the following record for the closing month of the year:—

IMPORTS.	1899.	1900.	Difference.
	Bushels.	Cwt.	Value.
Fruits, raw:—			£.
Apples	560,414	336,292	+23,149
Bananas... bunches	.....	94,206	+40,420
Grapes	7,916	4,029	+1,745
Lemons	170,969	82,889	-9,181
Nuts—Almonds (cwt.)	12,639	7,969	-8,992
Others, used as fruit (value) ... ..	.....	£100,312	+9,196
Oranges	1,443,814	1,042,573	+82,841
Pears	13,873	13,942	+5,341
Plums ... ..	.....	3	+2
Unenumerated... ..	95,163	10,897	-84,399
Vegetables, raw:—			
Onions bush.	535,713	554,660	+1,589
Potatoes cwt.	221,670	741,585	+90,399
Tomatoes ... .. "	.....	35,361	+36,457
Vegetables, raw, unenumerated... .. value	£95,210	£60,387	-34,823

A very nice collection of figures are these, but we understand that comparison will be rendered easier in the figures for 1901. The summary for the twelve months is a highly instructive one, but most especially so for commercial men, who may at home be amateur fruit-growers—certainly gardeners. The value of the twelve months' imports

is £523,633,486; for 1899 £485,085,583, an increase for last year of £38,597,903. It would be idle here to open up the accounts, and it may, perhaps, suffice to note the items of decrease: tobacco, £694,161; chemicals, &c., £209,337; parcels post, &c., £19,875.

EXPORTS.

According to some folk, we are being knocked out of the commercial race by our American cousins and the enterprising German; just so! The value of the exports for December, 1899, was £22,038,489, against £23,611,972—an increase of £1,573,483. In the latter there are only two items of decrease, i.e., living animals, £18,752; and metal and articles manufactured therefrom (except machinery and ships), £412,594. Add to this the year's work, and our position is better defined. Exports for 1899, £264,492,211, against £291,451,306 for 1900—an increase of £26,959,095. Did the three nations instanced, working on the same tariff base, possibly the difference in our favour would be still more pronounced. As a grand total, our foreign trade for the year foots up at the magnificent sum of £815,084,792. Learning lessons day by day, improving on old ideas, fighting always for the "open door," who will venture to prophesy what the grand total will be when the century now begun has closed its days?

RHODODENDRONS IN JANUARY.—From Sandon Hall, Staffordshire, we receive a truss of a hardy Rhododendron with reddish-violet flowers. In spite of its hardihood, the foliage seems to indicate that it is a seedling from one or other of the Sikkim kinds. Our correspondent says there were seven trusses open at the same time.

"BOTANICAL MAGAZINE."—The plants figured in the January number are:—

Hibiscus Manihot, Linn., t. 7752.—A magnificent stove annual, with large Mallow-like flowers, pale yellow, with a purple spot at the base; leaves deeply palmately-lobed. It was introduced to our gardens before 1732. See *Gardeners' Chronicle*, 1897, ii., p. 249, fig. 74.

Lhotskya cricoides, Schauer, t. 7753.—A native of S. and W. Australia, introduced by Mr. J. H. VEITCH. It is a Myrtaceous shrub, with densely-packed linear leaves, and clusters of small white flowers surrounding the branches. It was named after J. Lhotsky, a botanical traveller, whom the editor, Sir JOSEPH HOOKER, met in Madeira in 1839.

Pyrus tianschanica, Franchet, t. 7755.—Closely allied to our Mountain Ash, but has larger flowers, and five carpels.

Allium Ostrowskyanum, Regel, t. 7756.—A handsome species, with umbellate inflorescence and pink flowers. It is a native of Western Turkestan.

FROST ON THE RIVIERA.—Commander T. HANBURY, of La Mortola, Ventimiglia, Italy, writes under date of January 8, that a sharp frost occurred there on the nights of the 5th and 6th inst., the thermometer at 8 A.M. on the Sunday morning marking 26 Fahr. The result was most disastrous, hundreds of plants being either killed or very much injured. Agaves, Aloes, and other succulents however stood the cold well, and appear not to be much affected. On the plain west of Bordighera ice on the tanks is reported to be 1 inch thick, and the havoc at Nice and other places along the coast that are not sheltered from the north is terrible.

MR. S. HUGH F. HOLE, son of the Dean of Rochester, recently made his first professional appearance since returning from South Africa, at the Derbyshire Quarter Sessions. In returning thanks for the welcome accorded him, Mr. HOLE said that the last time he was in a Court of Justice he was 7,000 miles from Derby, and occupied a position in the dock on a charge of being an English spy within the Boer lines!

BURBANK'S LATEST.—That LUTHER BURBANK has been busy at his Californian headquarters is indicated by his statement in *Rural New Yorker*, from which the following is extracted:—

"July 4" is without any exception admitted to be the most perfect Plum in existence for quality. It stands with Seckel Pear and the Garden Royal Apple as the very standard of excellence. There is no difference of opinion in that respect. It is a second-generation seedling from a French-Prune, Japan-Plum, American-Plum cross. The combination of flavours, like one of my White Nectarine Wager Peach crosses is something never to be forgotten when once tasted.

My "Plumcots" produced by combination of the Apricot and various Plums, are the latest wonder among pomologists and fruit-growers. These have the form of an Apricot, the

failing productiveness, small seed, and other superior qualities, will make themselves felt later on in pomological enterprises and investments all around the world. *The National Nurseryman, Rochester, U.S.A.*

THE WOBURN POT-CULTURE STATION.—The recent number of the *Journal of the Royal Agricultural Society* contains an interesting account of the experiments carried out at Woburn by growing plants in large pots with different manures, &c. It is obvious that, in spite of some disadvantages, the method admits, for purposes of comparison, of greater accuracy than can be had in the case of field experiments. The plants can be protected in case of need, watering can be attended

and Plum pudding, innocent of suet in its composition. He assured his hearers that the "humble Onion, Lentils, Cabbages, and good Apples would benefit them more than meat in any shape or form. Mr. CANNELL was accorded a hearty vote of thanks for his address.

LINNEAN SOCIETY.—On the occasion of the evening meeting to be held on Thursday, Jan. 17, at 8 P.M., the following papers will be read:—I., Prof. E. RAY LANKESTER, F.R.S., F.L.S., on the "Affinities of *Eluopus melanoleucus*," with a description of the skull and some of the limb-bones, by Mr. R. LYDEKKER, B.A., F.L.S.; II., Mr. H. LYSTER JAMESON, B.A., Ph.D., on the "Natural History and Artificial Cultivation of the Pearl Oyster."

BRITISH PROGRESS.—We read such alarming reports as to the advance made by Germany and the United States, especially in the matter of machinery, that it is satisfactory to find, from the *Journal of the Royal Agricultural Society*, that the English exhibits of agricultural implements at the recent Paris exhibition were of the highest class, and that the British section still maintained its foremost position amongst the countries exhibiting, both as regards the design and workmanship of the several engines and machines exhibited.

WINTER CARNATIONS.—Mr. ELLIOTT, of the Court Bushes Nursery, Hurstpierpoint, Sussex, sends us blooms of three new varieties, to show how well they are adapted for decorative purposes at this season. The flowers had been cut from plants which had been in bloom and regularly cut from for three months. The flowers were therefore not seen at their best—a circumstance which the better enables us to judge of their merits. Queen of Holland is of a peculiarly rich crimson, with well-formed petals. The flowers were accompanied by photographs which are not adapted for reproduction:—

Brightonian.—Blooms large, of a peculiar shade of crimson-scarlet, bright and beautiful, sweet-scented, well thrown up on strong elastic stem; plant very strong and robust; a wonderfully prolific winter-bloomer.

Queen of Holland.—Large, smooth, well-made blooms, of a deep rich velvety-crimson, borne on very strong stem, erect, and almost self-supporting; sweetly scented; robust habit.

Sweet Primrose.—Flowers medium-sized, soft clear primrose colour, flaked with white, delicately primrose-scented; a most charming variety, producing its blooms in great abundance all through the winter—in fact, all through the year.

STREET TREES.—A recent number of Moller's *Deutsche Gärtner Zeitung* contains illustrations of trees used to line the streets in various cities of the Eastern United States, such as *Betula alba*, Lombardy Poplar, Tulip-tree, *Ulmus campestris* (? *americana*), *Ginkgo biloba*, *Ulmus campestris* var. *umbraculifera*, and *Catalpa bignonioides* var. *nana*, a round-headed tree like the round-headed Robinia. The great requisite in streets of narrow width, and in forecourt gardens, is trees of moderate stature, which will not dwarf the houses to which they are in proximity, nor cast an excess of shade and humidity.

SEEDLING SUGAR-CANES.—The Imperial Department of Agriculture for the West Indies, Barbados, has issued a small pamphlet giving a summary of the results of the cultivation of seedling and other Canes at the experimental station in 1900. The Canes were grown at seven different stations by the planters themselves under the ordinary conditions of cultivation. A series of tables gives the mean results in the production of saccharose (pure crystal sugar), glucose, the number of tons per acre, the weight of "tops" per acre, and other details. It is too soon as yet to draw valid inferences from the experiments, but it may be said that the prospects are hopeful.

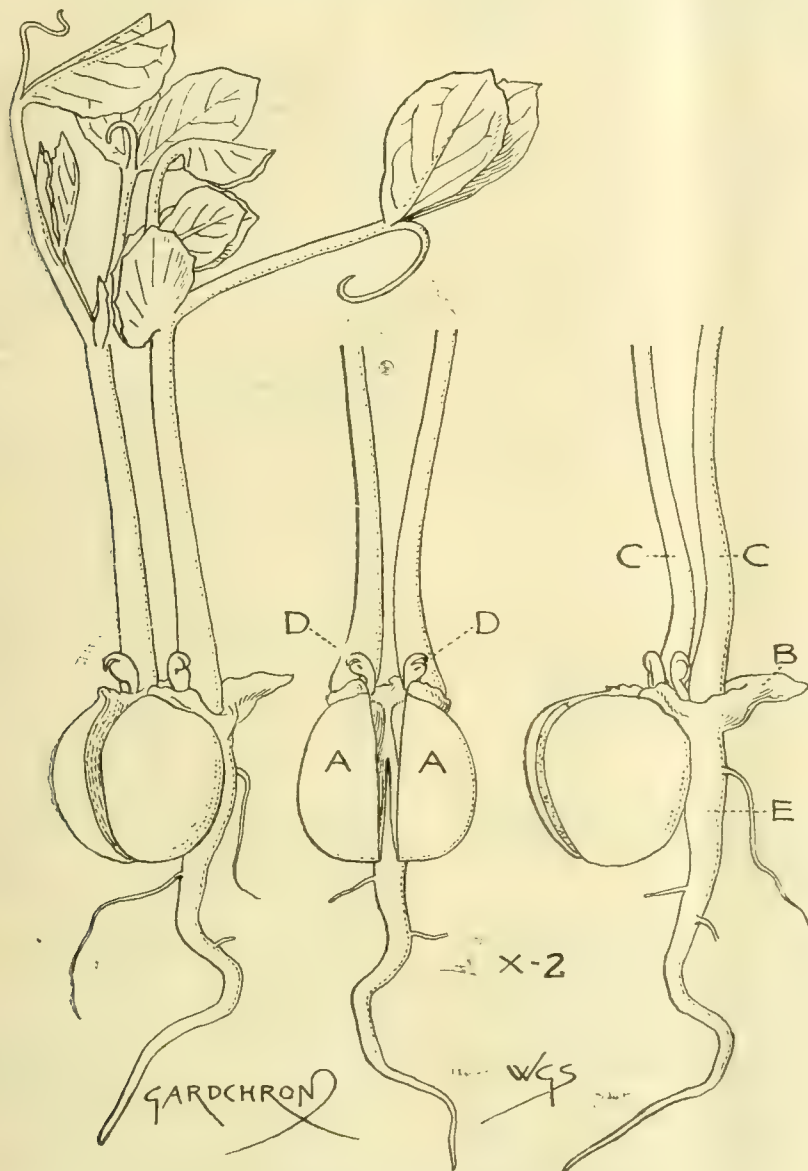


FIG. 12.—PEA SEEDLING WITH DOUBLE PLUMULE.

A A, Cotyledons; B, Outgrowth at base of plumules; C C, The two plumules; D D, Secondary buds at the base of the plumules. Twice the natural size. (See p. 30.)

same general outside appearance, but more highly coloured than either Plum or Apricot, with a skin unique—soft, slightly silky, downy with a shadow bloom, the flesh generally yellow, often deep crimson, either freestone or clingstone; seed more generally like a Plum-stone, but often *vice versa*. The rich flavours of these fruits are a revelation of new fruit possibilities, and are not duplicated in any other earthly fruit.

The "stoneless" Prunes and Plums are gradually improving in size and quality, and promise unexpected usefulness. The hardy Minnesota combinations with large Japanese and Domestic Plums are now fruiting, about 8,000 of these ripening this month for the first time; and the wonderful combination of size, form, colour, growth, foliage, &c., make them an absorbing study. The size and quality have in almost every case been improved from one to 500 or 600 per cent., and often the growth of tree also. The hardy little Beach Plum (*Prunus maritima*) has also been induced to form a combination with some of the giant ones, and from their never-

to more definitely, and the soil is of a more uniform character. As a preliminary to experiments in the field, and as furnishing indications as to what can, and what cannot be done, these pot-experiments are likely to be very valuable.

VEGETARIANISM.—This very ancient ism had an able exponent in the person of Mr. H. CANNELL, who has in recent years foresworn a meat diet, with, as he told his audience at the Crays and Orpington Cottagers' and Gardeners' Mutual Improvement Association meeting on Wednesday, the 2nd inst., the greatest benefit to his health and his pocket. Mr. CANNELL's favourite dishes at this season consist of Haricot Beans, or, as he calls them, "White Runner Beans," American squash,

SENECIO TABULARIA.—A Mexican Composite, with large peltate, rounded, palmately-lobed leaves 40 centimetres in diameter. It is well adapted for "sub-tropical" beds, or isolated on the lawn as a specimen plant. It is not hardy, but its rhizomes are easily preserved under the greenhouse stage. It is figured by M. MARC MICHELI in the last number of the *Revue Hortico'le*.

EMIGRATION.—The following extracts from the January Circulars of the Emigrants' Information Office, and the annual editions of the penny handbooks, show the present prospects of emigration as regards persons acquainted with country pursuits—

There is no demand in Canada during the winter season for any class of emigrants, except female servants. In New South Wales the break up of the drought last year has much improved the prospects of all kinds of labour. But there were throughout the year large numbers of unemployed in Sydney, many of whom were provided with work by the Government Labour Bureau at quarrying, railway construction, &c., the ordinary wage being 7s. a day. In country districts there is plenty of farm labour of a kind, but there is a considerable demand for skilled hands; farmers, however, as a rule do not offer permanent employment, but only during the busy seasons. The price of coal at the Newcastle coal-mines has been raised to 11s. a ton, with a corresponding rise in the hewing rate. The mines have been very busy, in spite of the disputes between employers and employed, and there has been a demand for skilled coal-miners. In Victoria there is no demand for mechanics or labourers unless they are specially skilled, and bring a little money with them. Many unemployed have been provided with work during the last few months on railway construction. In South Australia there is practically no demand for more mechanics in the towns. In country districts there is good employment for agricultural labourers, for men able to work binders and strippers, for boundary riders, and for married couples without children for stations, but the local supply of labour is generally sufficient. Owing to drought and scarcity of employment in Queensland, emigrants, other than female servants, are not recommended to go there at present, unless they receive assisted or nominated passages, or take a little money with them. Free passages have recently been stopped. The strike at the Ipswich coal-mines has been settled, and the hewing rate has been fixed at 2s. 6d. to 3s. a ton, with a further rise if the price of coal increases. With regard to Western Australia it should be remembered that the population of the colony, though it has rapidly increased, is still small, and that, therefore, the demand for all kinds of labour is necessarily limited. Official returns for the quarter ending September 30 last, show that farm labour is wanted at Toodyay, Geraldton, Katanning, York, and Beverley; that good, unskilled labourers are wanted at Perth, Katanning, York, and Beverley; and that female servants are in demand in nearly all districts. Free farms are given to settlers. In Tasmania there is no general demand for farm labourers. The last reports from New Zealand show that there was plenty of work there except in the meat-freezing works. Farm labourers are in good demand at the present time. Persons are warned against going to South Africa at present in search of professional or manual work, unless they have ample private means to meet the very high cost of living. They will not, as a rule, be allowed to proceed up country. There are already large numbers of persons in South Africa at the present time who are out of employment. Recruiting in this country for the Cape Mounted Riflemen has been resumed. Candidates must address a letter, endorsed "Riflemen," to the Agent-General for Cape Colony, at 112, Victoria Street, London, S.W. Candidates for the new South African Constabulary should apply to The Recruiting Officer, 1, Chapel Place, Delahay Street, Westminster, S.W.

The Emigrants' Information Office is located at 31, Broadway, Westminster.

PUBLICATIONS RECEIVED.—*Mitteilungen der Deutschen Dendrologischen Gesellschaft*, 1900, contains a coloured plate of *Disanthus cercidifolia*, with a description of the plant, by St. Paul, and various other appropriate articles and illustrations.—*Report on New South Wales Botanic Gardens and Domains for 1899*. A favourable report, and containing allusion to the great need existing for a botanical survey of New South Wales, such as "India has for many years enjoyed," and the hope that no great time will elapse before such an enterprise is undertaken.—*Bulletin of the Botanical Department, Jamaica*, November, 1900. Edited by W. Fawcett. Contains papers on: Manuring, Budding Orange Trees, and additions and contributions to the Department.—*Proceedings and Journal of the Agricultural and Horticultural Society of India*, for July-September, 1900.—*Journal of the Department of Agriculture of Western Australia*, November, 1900, has articles on: Exporting Oranges, Strawberry Culture, Purslane as a Forage Plant, Orris-root, &c.—*The Canadian Horticulturist*, December, 1900. Special feature of this number: Report of successful Export Shipment of Tender Fruits.—*The Tokyo Botanical Magazine*, October 20, 1900, contains: *Notulæ ad Plantas Asiaticas Orientales*, by J. Matsumura; *Plantæ Sinenses Yoshianæ*, by T. Ito, and other papers in Latin, and in Japanese.—*Journal of the Board of Agriculture*, December, 1900, contains articles on: Grain Harvest in 1900, Quality of Barley grown after Roots, External Timber Trade of the United Kingdom, &c. As regards the grain harvest,

the yield per acre alike of Wheat, Barley, and Oats, is shown to be more or less below the average of the preceding ten years. In Wales and Scotland, this year, the Wheat crop appears to have been relatively better than in England, although the area under Wheat in these districts is much too small to affect materially the general result.—*Woman's Agricultural Times*, January, 1901. The contents include papers on: The End of the Century, Openings for Women in connection with Rural Education, Founders' Day at Lady Warwick Hostel, Reading, and Poultry-keeping for Women.—*Bulletin of the Botanical Department, Jamaica*, January, includes notes on: The Philippine Hemp Industry, Cuban Tobacco, Oil of Lemon, and Rubber.—*Sugar Cane Experiments in the Leeward Islands*. Report on Experiments conducted at Antigua and St. Kilda in the season 1899-1900. This pamphlet is particularly to be noticed by those interested in the Sugar industry.—*The Tropical Agriculturist*, December, 1900. The articles include: Caterpillar Pests of the Tea-plant, Cacao Industry in Grenada, Sugar Planting in the Straits Settlements, &c.—*Nature Notes*, January, 1901.—*Blotter and Diary for 1901*, from the Anglo-Continental Guano Company (Horticultural Department), 30, Mark Lane, London.

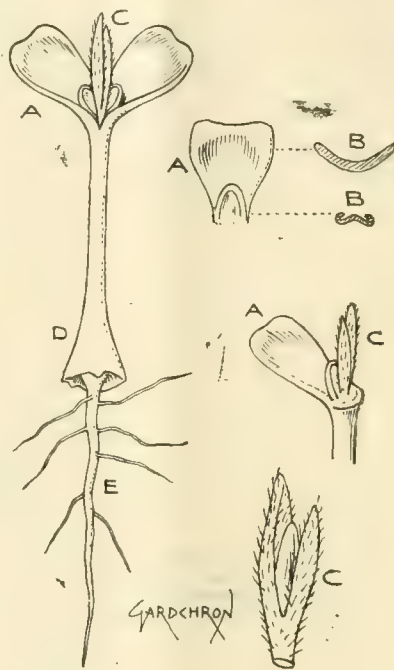


FIG. 13.—SEEDLING OF *LEUCADENDRON ARGENTEUM*.

A A, Cotyledons sheathing at the base; B B, Transverse Sections; C, Plumule; D, Caulicle; E, Radicle.

VARIATIONS IN SEEDLINGS.

SEEDS with more than one embryo are not uncommon, but I have hitherto failed to discover any record of a single seed with a double plumule. The instance now to be described is therefore not without interest. The specimen was sent to me by Mr. Cuthbertson, of Rothesay.

As may be seen from the illustration (fig. 12, p. 29), by Mr. Worthington Smith, the radicle was somewhat fleshy, but normal in form. The two cotyledons (AA) were also normal. Each was provided with a short deflexed petiole. Connecting the base of one petiole to the other was a collar or thin, almost membranous, ring encircling the base of the epicotyl or plumule, and prolonged on one side into a tongue-like process (B) similar to that which occurs among the Cucurbitaceæ,* but differing from it in protruding on the opposite side of the embryo plant, opposite to, or away from the base of the cotyledons, not directed towards them.

The hypocotyl, or, as it was originally called, the tigellum or caulicle, was not obvious externally, but there is no doubt that this sheath-like process emerges from axis at the junction between the radicle and the caulicle.

Traces of the sheath may be seen in germinating Peas, but I have never seen it so marked as in the present instance. Two plumules (epicotyls) arise

from within this sheath (CC), but whether the two are really distinct in their origin, or arise from the subdivision of one, I am not able to say. At the base of each is a small bud (D).

The seedlings of the silver tree of the Cape, *Leucodendron argenteum* (fig. 13), were raised by me some years since in a cool greenhouse. They were remarkable for the membranous fold or sheath projecting downwards from the base of the caulicle (hypocotyl). The artist has by an oversight shown the radicle proceeding from the centre of the sheath, but in reality it came from the side. M. T. M.

HOME CORRESPONDENCE.

ROYAL HORTICULTURAL SOCIETY AND ROYAL AGRICULTURAL SOCIETY.—Why is the distance so great between the two? What a good piece of work for the new century would be accomplished if these could be blended on friendly lines! One is in want of a Horticultural Hall; the other of a camping-ground near the metropolis, with the view of being utilised during the time it was not required for the preparation of the show and the show itself. The Horticultural Society's and the Royal Agricultural Society's interests are so similar, that if co-operation could be brought about between the two, both societies would benefit, and many members of one would become members of the other. And if it were possible for the Government to be approached to make the Royal Horticultural Society of England worthy of the national importance it is to this country and her colonies, a better opportunity could never occur. We can imagine a magnificent hall in the Royal Agricultural grounds, open for the exhibits of the Royal Horticultural Society during the show week; such a building and its contents would add lustre and attractiveness to the great show itself; and there can be no doubt that such a building in the Agricultural grounds, when not required by the Horticultural Society, would add immensely to the attractiveness and usefulness of the hundred-and-one things that the grounds could be used for when not required for at least ten months out of the twelve. W. Horne, Cliffe, Member of both Societies.

SIZE.—Question: Why is there such a persistent, thirsting, anxious crave for "size" or largeness in such things as our poultry, fruit, and flowers? Why? A large-boned weighty fowl is infinitely inferior in flesh tissue and quality, to one of a few pounds weight; which, though less, is absolutely worth more for "the table," though perhaps the marketable value of the former may be more, simply for the one reason—its size. But "is it better?" Again—and now fruit, "Is a big Gooseberry more enjoyable than that of a medium, or even a still lesser 'size.'" One must own that the general verdict as to flavour lies with the last. Is a big Grape, a big Peach, a big Apple, or a big Pear, more palatable or delicious than they of ordinary growth. It may be said with much truth that the smaller has more to recommend it to the taste, is far more satisfactory, and delightful to the senses generally, and possesses all the peculiar or otherwise flavour or flavours intensified and concentrated. For a long time I have had the idea, rightly or wrongly, that each fruit of a tree has so much of that which is known as flavour, be it good, bad, or indifferent, when naturally grown, and that if abnormally enlarged, there is no more, but in this case it is weakened by the addition of a vapid juice, or a watery admixture. Then, if this be so, that which is too often supposed to please the one sense through the eye, gives a direct loss to the other enjoyment, that of gratified taste. In most fruit it must be admitted that this is so, though where the wateriness is in the extreme it is almost objectionable. The big Melon is an instance. Again, should size be of such consequence, and have such pre-eminence, when it, as it is too often gained by the sacrifice of something that is really more enjoyable to other senses, than that of sight. And again, quality and fineness of fruit-fibre is more than endangered. In many cases, it no longer exists, and a coarseness nearly akin to wooliness is substituted, and the luscious natural richness that particularises certain varieties of fruit is often more than wanting, or in high deterioration. Then, I ask, why is size considered to be a quality in fruit growing

* Flahault, *Bull. Soc. Bot. France*, xxiv., 1877, p. 201; Darwin, *Movements of Plants*, p. 102; Lubbock, *A Contribution to our Knowledge of Seedlings* (1896), p. 161.

and showing, and as such rewarded—why? But leaving fruit size, which is matter that has before been much controverted, and of opinion, it is well to turn to flowers; possibly these should have had the first consideration, for we find that there are certain flowers that as a medium-size have a strange and fascinating beauty. The Primrose is one. When it is in a state of Nature, how it holds its own in the very lives of the people! Enlarge it in the way our other "loved ones" have been to some inches in diameter, and then what? I scarcely need to write it. The beauty would be coarsened away and killed by size. So with our Narcissi. In these, too, the craze for size is growing—"bigger and bigger, and still more big." Here is the description of a new wonder as given:—"A grand flower, over 5 inches in diameter." And our Chrysanthemums—size again. What is to be said of some of them? Big! The word hardly expresses the "size" they are grown to. Now another quotation. "An immense flower!" Where is the gain here? In some divisions of Nature and natural products they would be called monstrosities, and rightly so. For artistic beauty and floral elegance, take flowers of the old Dragon and other Japanese importations, with their light and varied grace and play of line and colour amid their half-entangled petals, and compare them with the pickling Cabbage size of our English enormities—our "biggerised" improvements! Apart, also, from their inflorescence, the altered habit of growth is coarseness, bordering on vulgarity, fully realised. I offered "a fancying" friend "a step-ladder" as a loan. "And why?" said he. "It will," said I, "give you the opportunity of seeing, closely inspecting, and endeavouring to admire the manure-persuaded growth of stem and plant, and—want of beauty in your Chrysanthemum flowers." These are but a few of my notes regarding the ever-growing craze for size. They may be grander in size, but, according to generally accepted rules, largeness is not a requisition of beauty. The beautiful has its right and true proportions, and size is a part of it. If bigness is prizable, then as to what limit? Read any nurseryman's catalogue, and there, again, we find grandis, magnifica, superba, &c., and in each case followed by the description "much larger than the older variety," or "more than twice the size," "a grand thing, 12 feet high," &c. Then the question—Is size a beauty? Is it a quality? or is it an insane craze? If not—what? *Harrison Weir, Poplar Hall, Appledore, Kent, January 1, 1901.*

SEQUOIA GIGANTEA.—I send a few cones of Sequoia gigantea with some seeds in them. I do not know if they would germinate. The recent gale shook out many of the seeds. Lobb's Thuja seeds very freely here, and the seeds germinate to the extent of 90 per cent.; why not therefore Sequoia seeds? The crossbills frequent Albury in great numbers, and these birds always go to the Sequoias for food, and unless the seeds were good they would not eat them. On the other hand, excepting in very hard weather, the seeds of Thuja Lobbi are not much taken by the crossbill or the nutcracker. The latter has often been seen at Albury of late years, and will, I hope, escape the thoughtless gunner. *W. C. Leach.*

THE MILDNESS OF THE WEATHER.—It may be of interest to some of the readers of the *Gardeners' Chronicle* to know what the weather was recently in Lancashire. It was so mild for the time of year that I was enabled to gather from the open ground flowers of Roses and Mignonette. On December 28 I gathered two fully-developed flower-heads of Rhododendron. The outside temperature on Christmas Eve at 9.30 P.M. was 48°, and on the following morning it was, at 7.30, 50°, and at 9.30 P.M. 52°. What a contrast is this to what we experienced in 1870, when, on Christmas Eve in Buckinghamshire, there were 32° of frost! *Chas. Hallett, Ince Blundell Hall Gardens, Blundellsands, Liverpool.*

AGAVE XYLINACANTHA MEOPICTA.—This is a very little known plant, at least I have seen only two specimens of it, but during the past summer one of them flowered, and a very beautiful thing it is too. Its long, curled leaves, from 2½ to 3 feet long, with its large yellow stripe down the centre of each, make it a very attractive object. The flower-stem was from 7 to 8 feet long, and the flowering part 3½ to 4 feet, but the flowers opened very badly, being very much twisted or curled, and

there was only one that opened well. Whether it is a natural thing with some to do so I do not know, but those that have flowered with me before were very different, and so far no seed has been produced, nor as yet any offset; so I presume there will not be very many more for me to see, as all the plants I have seen being in my possession up till now. Doubtless some of the readers of the *Gardeners' Chronicle* may be interested respecting it, and as the leading one of the day on horticulture it is read by many, I have myself read it for nearly fifty years, and I trust I may do so in the future. *J. C.*

FLOWERS IN JAPAN.—It is only within a comparatively recent time that any general idea has become prevalent in this country of the great love for flowers that exists among the Japanese. I have several curious Oriental books depicting flowers, besides such important English books as Conder's *Flowers of Japan*, Figgott's *Garden of Japan*, &c. Quite recently several fresh ones have come to hand, and one cannot help noticing the attention that is given to trees and flowers by these clever Japanese illustrators. One little book deals with the year month by month. In February is given a view of Oji Inari behind a setting of Pine trees on the mountain slopes. In April is a picture of the people enjoying the view of the Koganei Mound with Cherry-trees in full blossom. The month of May furnishes a pretty water-scene, with the Wistaria in bloom, in the garden of Komeido. August depicts the opening of the Lotus-flowers in the pond of Uyeno Park. Chrysanthemums in the garden of Hama Goten furnishes the motif for October, but the Japanese gentlemen in native costume render the picture a little incongruous by appearing in an ordinary felt bowler hat. November is the last month in which vegetation plays a part; here we see the Maple-trees putting on their gorgeous autumn-tints on Mount Takao. *C. H. P.*

PLANTING WASTE LAND.—After taking into consideration the position of the land, the next point to be considered is the placing of the trees in those positions in which they will form an effective break against the violence of the wind. To the stock-breeder, farmer, and agriculturist these tree-plantations, judiciously placed, will prove a great boon. I suggest that landlords should take the question of planting into consideration in the interests of their tenantry, as mutual benefit would arise to both by carrying out this arrangement. The landlord would ultimately receive the benefit in the value of the timber, and the tenant in the protection and shelter afforded to his young stock when the wintry blast blows keen. Round the margins of these plantations, as well as in the interior, I would recommend a thickly planted belt of young Gorse plants, with a few plants of the common Broom scattered here and there promiscuously. These plants, being of rapid growth, will help to nurse the timber trees, helping them to attain a quicker rate of growth. The Gorse plants would also form a splendid covert for game. Another important consideration is the kind of trees that may suit best the situation and locality. I would say for windy and exposed situations and elevated ground, plant a mixture of English Oak, common Ash, Horse-Chestnut, Austrian Pine, and Scots Fir. In marshy and wet land plant Alders, Willows, and Poplars. The Black Italian and Ontario varieties make the finest timber. For poor soils, where there is not much depth of earth, say a mixture of Mountain Ash, Hazel, Larch, and Hornbeam, with a thick belt of Gorse plants round. For protected situations, where there is a fair depth of soil, I would recommend Pinus Laricio. This Pine is also admirably adapted for seaside planting. Pinus Cembra, Spruce Fir, and Sycamores also thrive well in protected situations. If covert for winged game is required, plant also Mahonia aquifolia; pheasants are fond of the berries of this plant. For sandy and light soils, plant a mixture of Beech, Box, Privet, with a few Mahonia among them. For special ornamental plantations, providing there is a good depth of rich loamy soil, I would recommend a selection of choice Coniferous plants, and Abies in variety, with a few ornamental Maples among them, finishing off with a good belt of hardy Rhododendrons outside. Speaking in regard more especially to the chase, sportsmen always find there is no more favourite haunt for reynard than the Gorse coverts, and this being a plant that thrives on land where no other kind of vegetation will grow, it becomes a

sure source of profit to the owner of the same. It has been proved also to be a valuable food for cattle and horses. *A. W. G.*

RAINFALL AT HAMPTON MANOR, HAMPTON-IND-ARDEN, DURING 1900.—The amount registered each month at this place was as follows:—

January	...	...	...	3.25
February	...	...	...	4.44
March	...	...	...	9.56
April	...	...	...	0.97
May	...	...	...	2.13
June	...	...	...	3.25
July	...	...	...	1.21
August	...	...	...	3.50
September	...	...	...	0.87
October	...	...	...	3.02
November	...	...	...	2.08
December	...	...	...	4.08
Total	...	...	...	28.95

Greatest fall in twenty-four hours:—

January 7	...	...	...	1.11
June 12	...	...	...	1.06
December 31	...	...	...	1.87

Rain fell on 178 days. *Neil Sinclair.*

RAINFALL AT SHIPLEY HALL, DERBYSHIRE, IN 1900.—The rainfall in this place in 1900 is the greatest of which I can find records here. I give the amount for each month, together with the totals for the previous five years:—

January, 1900	...	...	...	3.97 inches.
February	...	...	...	4.02 "
March	...	...	...	.73 "
April	...	...	...	1.25 "
May	...	...	...	1.63 "
June	...	...	...	2.42 "
July	...	...	...	2.72 "
August	...	...	...	5.56 "
September	...	...	...	.87 "
October	...	...	...	3.05 "
November	...	...	...	3.05 "
December	...	...	...	4.49 "

33.87 inches.

Totals 1895	...	...	...	24.54 inches.
" 1896	...	...	...	23.10 "
" 1897	...	...	...	25.79 "
" 1898	...	...	...	23.92 "
" 1899	...	...	...	27.76 "

Rain fell on 205 days in 1900; August was the wettest month. The heaviest fall for twenty-four hours was on December 30, when we measured 1.76 inch. The previous best was 1.30 inch on Aug. 5. *J. C. Tallack, Shipley Hall Gardens, Derby.*

CHARLES ERNEST PEAR.—It escaped notice on the part of the press that the very fine, handsome, and very nice eating fruits of this Pear which were placed before the Committee on Dec. 4th, were gathered from young trees out in the open ground. If it be so finely produced under such conditions, even finer fruits may be looked for from wall trees, as it is a December Pear and remarkably handsome. I should think were trees planted against a north-west wall, that fruits would be good at Christmas. Whilst this fine Pear obtained but an Award of Merit, less fine and certainly less handsome fruits of Nouvelle Fulvie from a wall in Kent, where it will only thrive with such protection, obtained a First-class Certificate, because its flavour was rather better than was that of Charles Ernest. When both Pears are grown under the same conditions the latter will be the better. *D.*

SUBMERGED OAKS.—I have read the several letters on this subject by correspondents, none of whom commit themselves to the definite assertion that the common Oak prefers a water-logged or wet soil to grow in all its life. Occasional submerging is another thing. As far as I am aware, all our forest trees will bear that more or less, but not for long; and as to the Oak, all evidence worth recording is to that effect, so much so, that one is surprised to find people trying to controvert it. Let me give a few instances. In one Oak wood, on a dry hillside, where Oak of both sorts has grown for generations, all the strata were dislocated in consequence of the ground being mined under and near the surface for fire-clay or Ganister Rock. This caused some parts of the wood to become swampy, so much so, that sphagnum appeared in places. There was a regular crop of good Oak on the ground, but some years after, the ground had become wet, they began to go off, and were cut down, as they showed signs of decay, till finally I cleared the whole piece, there not being a single healthy Oak left. This was going on for over twenty years, and the trees were under my observation the whole time. The next instance was on

the borders of the Fens, in a large tract of coppice under standards of Oak and Ash. The estate has been lately transferred, and the woods had been neglected. I had to go over them. In this piece the whole of the Oaks and Ash are at present either dead or dying, and many are down, lying with their rotten roots in the air. Water was again the cause. The ground being very flat, with hardly any outfall, it had become water-logged because the open drains, made long ago, had got filled up and become stagnant canals. Even the underwood, except the Alder, is going off. Near to this tract, but up on the higher, dry, chalky down, there are many splendid Oaks of good size, a number of which I lately measured and sold standing at 2s. 6d. per foot, or fully £11 per tree. Next about the trees at Belvoir Castle, of which so much has been made: Leicester is one of the driest counties in England, and the average rainfall at Belvoir—where there is, or was, a station of the S.M. Society—is 26 inches, and often less. The maximum in England is 80 inches and upwards. Floods cannot, therefore, be of frequent occurrence at Belvoir, nor can the light rainfall remain long upon the surface when it does come. The blue lias formation, described by Mr. Divers, is, as a rule, naturally well drained, and does not consist so much of clays as of blue and brown limestones and shales. I note, also, that the dell described by Mr. Divers is not all wet, but that the water only stands in a hollow in the middle of it that was once a pond, "he was told," and that the trees he cites are in that hollow. How long, then, is it since the spot was a pond if the trees are of the size and age described? He speaks as if the pond had not long disappeared. Mr. Niven, curator of the Botanic Garden at Hull, long ago described in the *Garden* the fine old Oaks at Belvoir as growing on the steep, dry ridges above the Castle; so that, taking all the evidence as to climate and other conditions there, Belvoir appears to afford a good example of Oaks thriving in a thoroughly dry spot in a dry climate, while the deeper soil and shelter of the dell referred to by Mr. Divers sufficiently explain the superiority of the trees on that spot, the flooding having nothing to do with it. At Newstead Abbey, where I have been staying lately, not far from Belvoir, the rainfall is only 18 inches, as the owner told me, and Newstead is about the centre of the old Sherwood Oak forest, and there, on the dry spots, are to be found Oaks in perfect health of all ages. The Pilgrim Oak, near the Abbey, is a very old and fine example. It is safe to predict, I think, that those who plant Oak in a wet soil will rue it. *J. Simpson.*

BERBERIS VULGARIS AS A HEDGE PLANT.—Mr. Simpson's remarks, p. 435, ante, prompt me to send this note now. Some time ago I came across a piece of hedge in an old established thorn-fence, formed of the common Barberry. I intended sending you a note of it at the time, but did not. It is 3 or 4 yards in length, and forms quite as impenetrable a barrier from either side as the thorn-fence, of which it forms a part. The said fence is on the side of the public road, and the grass enclosure it protects is regularly grazed by horses and bullocks. As will be known, this Barberry is freely furnished with stout, sharp spines, which are almost, if not quite, as difficult to tackle as a barbed-wire fence Mr. Simpson speaks so highly of. In hunting districts the latter is looked upon by many with horror. The habit of growth of the common Barberry is of a spreading character; hence, in a fence the branches get more interlaced than do those of the Whitethorn. Judging by the portion of hedge I know of, it bears annual cutting well; at any rate it has been annually cut to my knowledge for nearly thirty years, like the thorns on each side of it. Seeing that it fruits so freely, I should say that its reproduction in quantity would soon be attended to if there were a demand for it. For "gapping" old Quick fences, I should say it would be very useful, seeing that young Whitethorn seldom grow well in such positions, unless the whole of the soil for some depth and width is renewed, and this costs money that might be more usefully expended in other directions. *H. J. C., Grimston, Tadcaster.*

CROSSES OR HYBRIDS?—The note on "Hybrid forms or Varieties" in the issue of December 29 recalls to me an idea which has long been in my

mind, that the drawing of a line between hybridisation and cross-fertilisation is fundamentally wrong. Whether the fertilisation be effected between two genera, two species, or two varieties, the process is precisely the same, viz., cross-fertilisation effected by the transfer of pollen from one plant to the other, and if the process be successful, the subsequent results are precisely analogous, viz., a co-adaptation of the diverse forms, and a plant presenting more or less, latent or patent, the features of both parents. They are all crosses, and to my mind, the proper way to discriminate the three grades of differentiation between the parents is to name them respectively bi-generic, bi-specific, and varietal crosses, and to name the general process "cross-fertilisation." This would not involve disuse of the convenient term hybrid for plants resulting from bi-specific or bi-generic crosses; that I do not advocate for a moment, but it would certainly simplify references to the subject, which at present frequently involve an illogical splitting of terms into hybridisation and cross-fertilisation, which, as processes, are absolutely identical. *Chas. T. Druery, F.L.S., V.M.H.*

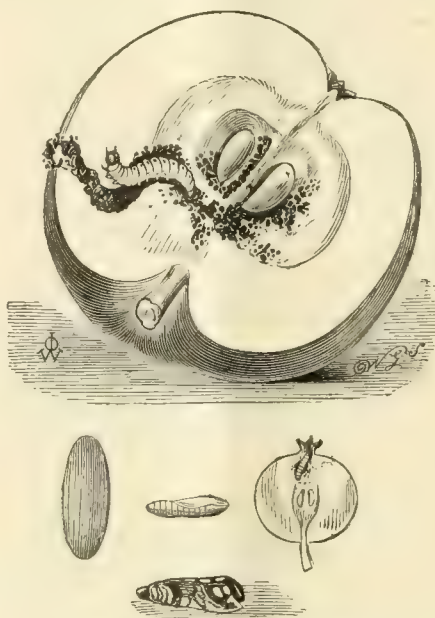


FIG. 14.—THE CODLIN MOTH (LARVÆ).

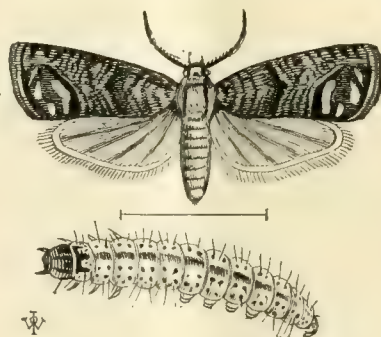


FIG. 15.—CODLIN MOTH (*CARPOCAPSA POMONELLA*).

THE CODLIN-MOTH, OR APPLE-MAGGOT.

(*CARPOCAPSA POMONELLA*.)

Of all the pests to which fruit-trees are liable, there is probably none which is more general in its ravages than this, and not only in this country, but on the Continent; in America, Canada, Australia, and Tasmania, in the last of which legislation has come to the help of the grower. There can be little doubt that in this country it is more general now than it was a few years ago, probably owing to the succession of mild winters we have had during the last half-dozen years.

The Apple-maggot, as it is popularly called, or

Codlin-moth larva or caterpillar, to be scientifically correct, is so familiar to everyone that it need not be described here, as there are few people who have not bitten into one at some time or other. Before we can prescribe for the cure of this pest, however, we must say something about the life-history of the insect, which is not so familiar to everyone, many false statements being made about it, owing to its being confounded with the winter-moth and the lackey-moth. Even a leading daily paper, in an agricultural article, some time ago, said that as the female Codlin-moth could not fly, the way to get rid of it was to put grease bands round the trees to prevent it crawling up the stems.

The moth appears about the end of May, and flies from tree to tree, placing one egg on each Apple, generally at the calyx end, and when it hatches, the young larva which is produced, immediately bores into the Apple, and sooner or later begins feeding upon the pips. When the larva reaches maturity, it emerges by a hole to the outside, and if the Apple is still on the tree, lets itself down to the ground by a silken thread; but if the Apple is already fallen, merely crawls out (fig. 14). It then wriggles to the nearest tree, hides itself in the cracks and crevices of the bark, spins a cocoon for itself, and so passes the winter, either in the pupal or larval stage. It also hides itself amongst any rubbish there may be about near the trees, or even in the soil, if it is loose enough. If the Apple has been picked, and is in the store-room when the maggot emerges, it hides in the cracks of the walls or floor. An important thing to know is, that in the spring the moths emerge from their chrysalides, whether in the ground, the store-room, or the crevices of the bark, and fly straight to the Apple-trees to lay their eggs, thus completing the cycle of existence.

Having thus got an idea as to the life of the insect, we can discuss the means for getting rid of it. It is a comfort to know that this pest can be prevented altogether, if the necessary trouble be taken, though it rarely is taken by the owners of a few trees. To prevent the caterpillars crawling up the stems of the trees when they emerge from the Apples, old sacking should be tied tightly round the stems of the trees a foot above the ground in the early summer, which should be taken off occasionally and examined. This practice is compulsory by law in Tasmania and California. The windfalls should be cleared off the ground as soon as they fall, and disposed of, so that the caterpillars do not have the chance of getting into winter quarters. Scraping the bark of infested trees is also a good thing, followed by a wash with a caustic solution. Fine wire netting should be put over the windows of Apple store-rooms to prevent the moths escaping in the spring. All these things are good for minimising the pest, but they will not prevent it altogether, unless the trees are a long way from all others. The principal thing to do, and the only really effective way to get rid of this pest, is to spray the trees with Paris-green, a poisonous compound of verdigris, copper, and arsenic. Great care is necessary in the application if it is not to damage the foliage, either of the trees or of the things growing underneath. An ounce to fifteen gallons, or half-a-pound to a hundred gallons, is a fairly safe amount, if the liquid is kept well stirred and twice as much lime as Paris-green added to the solution to guard against the possibility of soluble arsenic. The trees must be syringed with it two or three times in June, and even later, as the eggs are laid at different times.

There is rather a prejudice against Paris-green in this country, and some prefer to use an emulsion of paraffin and soft-soap. This, if done several times during the egg-laying season, would prevent the moths laying their eggs upon the trees which had been syringed, but would not kill the caterpillars already hatched.

A copy of a leaflet dealing with the Codlin-moth very fully can be obtained from the Secretary, Board of Agriculture, 4, Whitehall Place, London, free on application. *Alger Petts.*

NOTICES OF BOOKS.

BOTANY: AN ELEMENTARY TEXT-BOOK FOR SCHOOLS. By L. H. Bailey. (Macmillan & Co.)

THERE seem no limitations to the energy and industry of Professor Bailey. What is of infinitely greater consequence than mere amount of production is its quality, and in this respect the reader may be amply satisfied, for Professor Bailey's treatment of whatever subject he takes in hand is marked by originality and insight. It is refreshing in these days, when novices and beginners are set to work immediately with the microscope, and finish up with a detailed knowledge of a few "types," and a more or less profound ignorance of plants in general—it is refreshing, we say, to read such a passage as this: "Study with the compound microscope is a specialisation to be made when the pupil has had experience, and when his judgment and sense of relationships are trained. One of the first things that a child should learn when he comes to the study of natural history, is the fact that no two things are [exactly] alike. This leads to an apprehension of the correlated fact that every animal and plant contends for an opportunity to live, and this is the central fact in the study of living things. The world has a new meaning when this fact is understood. . . . Botany should be taught for the purpose of bringing the pupil closer to the things with which he lives, of widening his horizon, of intensifying his hold on life. It should begin with familiar plant forms and phenomena; it should be related to the experiences of daily life. It should not be taught for the purpose of making the pupil a specialist, that effort should be retained for the few who develop a taste for special knowledge. . . . Teach first the things nearest to hand. When the pupil has seen the common, he may be introduced to the rare and distant. We live in the midst of common things."

After commenting on the phases through which the teaching of elementary botany has passed, the author says: "We are now living in the beginning of an epoch in which the teacher induces his pupil to make 'effort to know the plant as a complete organism, living its own life in a natural way. . . . Excite the pupil's interest rather than his wonder.'"

In carrying out his methods in the present book, the author has had the assistance of several teachers, whose aid he acknowledges. After the extracts we have made showing the author's plan of operations, it is only necessary to add that the details are grouped under four divisions:—I., the plant itself; II., the plant in its environment—a most interesting series of chapters; III., histology; and IV., the kinds of plants.

The book forms an admirable summary of the points most worth the pupil's attention in the first instance.

QUICK FRUIT CULTURE: NEW METHODS FOR GARDENS GREAT AND SMALL. By John Simpson. (Sheffield, Pawson & Brailsford.)

This edition is an old friend in a new garb; the original was named *Improved Pruning and Training of Fruit Trees*, and doubtless did much towards popularising the extension system of pruning; *Quick Fruit Culture* is, of course, an enlarged work, and taken as a whole, contains a fund of cleverly written matter appertaining to the skilful management of fruit-trees, useful alike to the commercial fruit-grower, as well as the enthusiastic amateur. Nevertheless we think the revision is not quite up-to-date. For instance, in giving a list of the best varieties (thirteen) Pears, who would plant Beurré Rance, so seldom good in any position, however favoured, and leave out the best Pear in the world, viz., Doyenné du Comice. Again, when dealing with insect pests, we should be enlightened about the Pear-midge, *Diplosis pyrivora*, in addition to those enumerated.

We should also have liked to have had the word "root-lifting" substituted for root-pruning, and more value set upon surface or fibrous roots as fruit formers, with the value of mulching and feeding them set forth, as being of the utmost importance, instead of being scarcely mentioned. In our own case we are compelled to lift all our Peach-roots every year, in order to bring them within reach of solar warmth, so as to ripen the growth, both wood and buds. In our strong heavy loam, all kinds of hardy fruit-trees are better for root lifting once or so, according to growth of wood. We therefore are quite at variance with the author when he says, "Over luxuriance and consequent barrenness is caused by overfeeding, and a tree can be as readily overfed by fibrous roots as by those of another description."

It is our opinion that the "other description" roots do not ripen the growth they make, by keeping on growing so much later; whereas the fibrous-roots made growths, being under atmospheric influence, do solidify and ripen the shoots



THE LATE SIDNEY COOKE.

and buds made, especially where assisted by a judicious thinning of superfluous shoots by summer pruning. Hence our theory, founded upon many years practical experience, viz., that it is impossible to have too many fibrous roots, and every encouragement should be given to multiply them, and treat them rationally and liberally when gained. Why our author holds this opinion for fruit-trees, and the opposite for Vines, is difficult to understand.

Our author states that stone fruits thrive at least as well, if not better, in firm borders, as in those that are loose. We would say that to plant a stone fruit in a loose border, would certainly cause the buds to drop off when forcing commenced.

We are staunch upholders of the extension pruning of Vines, but there is some inconsistency when advised to leave 12 to 19 feet of growth for a year or two, which would soon be the rafter limit, and then to spur-prune all lateral growth. Would not this sudden stop to extension growth be likely to bring about debility at an early stage? Apart from these few matters, the book is one of the best and most advanced of its kind that we have met with, and would form a good text-book for elementary education school-teachers, who are taking horticulture in their curriculum. C. W., M.

Obituary.

SIDNEY COOKE.—We much regret to record the death of this well-known Orchid grower and gardener, which took place at Sevenoaks on January 1, 1901. He has succumbed at the early age of forty-six, in the prime of his life and powers, after a short illness of exactly five weeks' duration. He had an attack of rheumatic gout, which developed the somewhat new phase of neuralgic rheumatism that has been so prevalent of late; other complications ensued, and after thirty-six hours of high fever, collapse followed, from which he could not recover; he was conscious, and knew all those about him almost to the end, but could not communicate to them beyond assenting by gesture. He died peacefully, attended by his wife and family and his employer, de Barri Crawshaw, Esq., of Rosefield, Sevenoaks, whose service he entered in April, 1881.

He has, therefore, seen the Rosefield Orchid collection grown under his charge from its inception, and has in that period helped to elucidate the now-made-easy culture of *Odontoglossum crispum*, the great "spécialité" at Rosefield, where he has grown and bloomed thousands of this Orchid. In other branches of his art he was a skilful man, especially in *Chrysanthemums*, which he has exhibited at the Kentish shows for years with great success.

He was one of the most energetic founders of the Sevenoaks Chrysanthemum Society fifteen years ago, having been its indefatigable Secretary for the last twelve years, leaving it in a most flourishing condition. He was a member of the committee of the Sevenoaks Horticultural Society, one of the strongest societies in the south-eastern counties. A Dorsetshire man, born at Charlton Marshall, he entered the service of Sir William Marriott, Bart., where he first saw an Orchid, his father being bailiff. From there he went to Mr. Harkey, of Fetcham Park, Surrey, where he stayed two years. He then came to Rosefield, having been under but three employers all his life.

As a man, he made himself popular wherever he went; a truly good husband and father, of determined character and fixed purpose once he had reasoned out his line of action. He will be deeply mourned by those nearest to him, and greatly missed by all who worked with and had any relations with him. He leaves a widow and five children, the eldest son having followed his father into the gardens of Rosefield.

GEORGE THOMSON.—We announce with regret the death of Mr. George Thomson, late of Urtica Villa, Knap Hill, Woking, at the age of seventy-seven. He was one of the oldest subscribers to the *Gardeners' Chronicle*, and at one time a frequent contributor. He had resided at Knap Hill since he retired from his post as superintendent of the Crystal Palace Gardens, in 1879, in which post he was the immediate predecessor of the late Mr. Head.

CHARLES PILCHER.—As briefly announced in our last issue, there passed away at a ripe age, at his residence at Wandsworth, on December 29, 1900, one of the best gardeners and Orchid growers of the century which he so nearly saw to a close.

In his early days Charles Pilcher acquired a sound knowledge of his profession in some of the best gardens of the time, and in due course he became gardener to Thomas Twisden Hodges, Esq., of Sandgate, Kent, a gentleman interested in Australian gold mines. As with all whom he served, Mr. Pilcher soon gained the confidence of his employer, who ultimately induced him, about the year 1850, to go to Australia to fill a position of trust in connection with the gold mines. Although his avocations were then wide of gardening, he never swerved from his love for his profession, and by his efforts did good work for Australian gardening of that time. Among other interesting facts, he used to relate how he introduced the first bunch of Watercress into Australia, at a cost of much perseverance and something like £5, for the process seems to have

been to persevere in trying to import the living plant. Thus, probably, the whole of that vegetable in Australia is due to his efforts.

He appears to have been successful in Australia, but on his return he at once resumed his profession, being recommended by the late Mr. James Veitch to Mr. Sigismund Rucker, of West Hill, Wandsworth. He served as head gardener there for upwards of thirty years, and during that time scarcely a new plant was introduced but it found a place there, and was cultivated up to its best. The relations between Mr. Rucker and his gardener were of the most pleasant: they always conferred as to the treatment of new subjects, and rarely differed. When either had his way in opposition to the other, the wrongdoer had to hear of it in a pleasant way. It is related that on one occasion Mr. Rucker insisted on having some *Phalenopsis* placed in the tank-house, and freely syringed. A visitor was shown them soon after they were so placed, and they seemed to be thriving well. Next season he went to look at them again, and found that "spot" had affected them. In self-defence Mr. Pilcher said "The master would have his way, and was never better pleased than when the water was being poured over them, and this is the result." Mr. Rucker smilingly replied "I can only plead guilty; but I think Pilcher might be content with whipping me privately."

In his relations with all with whom he had to do, his uniform straightforward manner produced a lasting respect, which will cause sincere regret at his departure from among us, and especially with those who served under him, among whom may be numbered Mr. Charles Canham, late Orchid manager to Messrs. Jas. Veitch & Sons, to whose kindness we are indebted for some of the particulars here given. Mr. Pilcher was a regular attendant as a member of the Orchid Committee of the Royal Horticultural Society for many years. After leaving Mr. Rucker's, Mr. Pilcher retired, but kept in touch with his friends by his regular attendance at the Royal Horticultural Society's and other meetings.

THE ROSARY.

CRIMSON RAMBLER, "PERPETUAL."

M. ANDRÉ in France, and M. Micheli in Geneva, have been so fortunate as to secure a form which flowers in autumn as well as in summer.

ROSA WICHURIANA RUBRA.

This Rose, a coloured figure of which is given in the *Revue Horticole* for January 1, is the result of a cross from *Rosa Wichuriana* by *Crimson Rambler*, effected by MM. Barbier Frères of Orleans. Seeds taken from this new variety have, M. André tells us, reproduced the varietal characters almost exactly.

FOREIGN CORRESPONDENCE.

TROPICAL FRUITS GROWN IN THE OPEN IN EUROPE.

I READ with much interest the article of Mr. John R. Jackson of Kew about tropical fruits to be had in London. Having often heard expressions of the greatest surprise from people when told that certain tropical fruits could be raised here on the south-east coast of France (and, of course, better still in other warmer parts of South Europe), I thought it might interest some of your readers to know that nearly all the fruits named by Mr. Jackson can be raised here, besides several other tropical fruits.

Now all the Citrus fruits ripen perfectly here; certain Oranges and Mandarines (*Tangerines*) perhaps being unsurpassed if the trees are well cultivated. The *Cherimoyer* (*Anona Cherimolia*)

and the Sweet Sop (*Anona squamosa*) also ripen, but do not come up to such as I have eaten in the tropics. Still, this does not prove absolutely that these fruits cannot attain perfection here, but may only depend on the plants being poor varieties all raised from seed and not grafted. I do not know if such fruit-trees are generally grafted in the tropics, but if grafting is as necessary with these as with our northern fruit-trees, it should rather cause astonishment that eatable and often good fruits are at all obtained so frequently when no other propagation than by seed is used. I do not know if other *Anonas* have fruited here, but I cultivate myself several others, and have found *A. squamosa* the hardiest, though up to now all have resisted, and may in time fruit.

I do not know if the Mango (*Mangifera indica*) is found in any garden here. I could only just recently procure fresh seeds, but as this tree has produced fruits in Lisbon, it probably could do so here in the most sheltered places. The Avocado Pear (*Persea gratissima*) is perfectly hardy here, and produces good fruits; it is said to resist even at Montpellier, where the climate is much colder. Still, I must add that I have personally had no success with this plant, which seems very refractory to calcareous soils. Possibly it could be grafted on some Laurel resisting calcareous soil. Of the Litchie (*Nephelium Litchi*) I have no experience, never having been able to procure plants or fresh seeds. The Loquat, or Japan Medlar (*Eriobotrya japonica*) grows here to perfection, and thousands of seedlings spring up everywhere; but up to quite recently no grafting has been practised, and the fruits are, therefore, of very different quality, though sometimes very good. The Persimmon (*Diospyros virginiana*), and the Chinese Date Plum (*D. Kaki*), and the *D. Lotus*, grow equally to perfection.

Of Sapotaceæ I have as yet had success only with *Lucuma neriifolia*, which is said to produce delicious fruits. My plants are young, but seem quite hardy. *Lucuma Sellowiana* is perfectly hardy also, but is said not to produce eatable fruits. I do not know of any Sapotaceous fruit-trees in gardens here. The Kei-Apple (*Aberia caffra*) is perfectly hardy here, so is the Natal Plum (*Carissa grandiflora*), and the Chou-Chou (*Secium edule*). I have sometimes sown seed of the Brazil Nut (*Bertholetia excelsa*), but none has germinated; probably this tree would not succeed here, coming from a very hot climate.

Many other tropical fruits besides those named as sold in London can be raised here; some, though, are perhaps more fruits of fancy than really savoury—at least, for Europeans. I shall, therefore, not name them, but only such generally appreciated fruits as Bananas, which ripen perfectly here, that is, the *Musa sapientum*; while the Banana generally cultivated in North Europe in hothouses for fruit, the *M. Cavendishii*, does not prosper here, at least it does not produce fruit, being much more tender.

Different Guava berries (*Psidium*) ripen perfectly here; the hardiest is *P. Cattleianum*, which produces most abundantly, and will grow anywhere and in the poorest soil. I know no fruit surpassing it for jelly, and it is astonishing that this good fruit is not cultivated on a commercial scale.

One of the most beautiful and perfectly hardy climbing plants here is *Tacsonia mollissima*, which produces abundantly fruits of a very agreeable taste, which might be utilised as the Pomegranate (*Punica granatum*) for juice, as they contain rather too numerous seeds to be eaten raw. I have a *Monstera deliciosa* in fruit, but not yet ripe, and do not know their value as fruit-plants. *Macadamia ternifolia*, the Queensland Nut, is perfectly hardy, and produces abundantly, but dislikes calcareous soil.

Lastly, let me name the Palms, of which all the *Cocos* species produce seed of very good flavour; in fact, all the species hardy here whose seeds I have tasted appear to me superior in flavour to the

large *Cocoa-nut* (*Cocos nucifera*). When these beautiful Palms, perhaps the greatest of all ornaments of gardens in this climate, become sufficiently numerous and of adult age, their produce of seeds will be such that I cannot doubt that they will be utilised. As yet only a single specimen of the common Date-Palm is said to produce good fruits here, but there can hardly be any doubt that some hardy variety will be found in the colder parts of North Africa, or found among seedlings of the one here at Nice, which the late Ch. Naudin has called *Phoenix melanocarpa*. I have several species and hybrids of *Phoenix* under observation, and some produce fruits of very good taste, though rather small, and not coming up to the standard of superior Dates.

Now, will you allow me—better late than never—to call attention to a slight mistake in a little article I wrote about the resistance of plants here to cold during last winter (*Gardeners' Chronicle*, No. 699, for May 19, 1900). On p. 305, line 20, it should be 2° below zero, instead of + 2° Centigr. As you will see, it entirely alters the conditions, because numerous plants which will resist a temperature of + 2° Centigr. will succumb at - 2° Centigr. A. R. Proschowsky, Grottes St. Hélène, Chemin de Fabron, Nice, France.

THE HERBACEOUS BORDER.

HELIANTHEMUM "JUBILEE."

AMONG the many forms of *Helianthemum* variable, none of the varieties with double flowers is equal to that known as *H. venustum*, fl. pl., but for some years back sent out as *H. mutabile*, fl. pl., with the exception of that now referred to under the name of *H. Jubilee*. The double-flowered crimson coloured variety, which should have some special name given it to distinguish it from other double-flowered forms of the same colour, has the merit of long blooming, and of showing its blooms well above the foliage. They are quite upright in habit of growth, and effective in the rock-garden for a long season. There are few persons who see this variety without desiring to possess it. It is so greatly superior to the ordinary double-flowered forms of *H. variable* that a few companions of different colours are much to be wished for. Until lately we have not had such, but a sport from the double crimson has now given us at least one other colour—a good yellow. This sport occurred in the garden of Mr. P. H. Normand, of Whitehill, Aberdour, N.B., where there is a choice collection of alpine flowers. Mr. Normand propagated the sport, and named it "Jubilee." My plant has not yet flowered, but I have seen the blooms elsewhere, and they are, in everything except colour, an exact counterpart of the crimson form. S. Arnott.

NINETEENTH CENTURY FRUIT-GROWING.—As one who has had some few years experience in fruit-growing (under glass) for market in three different centres of the industry, I can fully endorse the strong remarks in your issue of the 8th ult., concerning "the slipshod methods of our latter-day market-gardeners." During the time I have spent in the business nothing has impressed me more than the slovenly manner in which so many of our fruit nurseries are managed. Vines are allowed to grow almost wild at times. I myself have seen laterals and sub-laterals 3, 4, and even 5 feet in length in houses where the Grapes have been still in the green stage, and consequently requiring the entire energy of the Vine. Thinning, again, is too often rushed over, numbers of bunches being quite spoilt after having been hacked at by those who have little or no idea of the art. *Chrysanthemums* I have seen bunched and sent which were actually in a state of decay in the centre. To some this may seem hardly credible, but it is nevertheless a fact. It is a sorry state of affairs, and more so as ignorance is not always, I believe, at the bottom of it. C. M. A.

FRUIT REGISTER.

RED WINTER CALVILLE APPLE.

A HANDSOME Apple, medium-sized, roundish-ovoid, very slightly flattened at the top; skin deep glossy-red; flesh whitish, stained with red. Season, November. The name is derived from that of a village in Normandy. It is well figured in the *Italia Agricola* for December 30.

SOCIETIES.

BECKENHAM HORTICULTURAL.

ON Friday, January 4, the first meeting of the New Year, Mr. W. TAYLOR'S subject, "A Year's Work in a Vinery," was particularly appropriate. The cultivation of Vines, as practised at Tewkesbury Lodge gardens, was fully explained. Although these gardens are situated within a six miles radius of Charing Cross, Grapes have been produced there which have been awarded high honours at Sevenoaks in the east, Bath in the west, and Brighton in the south, besides the principal exhibitions held in and around the metropolis. The lecture was so full of practical information, it is impossible here to enumerate the details, but it may be stated that Mr. Taylor recommended those about to plant a vinery to include a Vine of the variety Chasselas Napoleon. Those who saw the bunches staged by Mr. Taylor at the last exhibition at the Crystal Palace will scarcely need to be reminded. Two excellent bunches of Alicante were exhibited as an object lesson to the Beckenham gardeners. They were cut from a Vine carrying fourteen bunches.

CHESTER PAXTON.

JANUARY 5.—The opening meeting for the present session, which took the form of a social gathering of the members and their friends, was held in the Grosvenor Museum on the above date. The chair was occupied by Mr. N. F. Barnes, gr. at Eaton Hall, President for the year, and an excellent programme of music was cleverly executed by several ladies and gentlemen. Mr. J. D. Siddall exhibited an interesting series of magic lantern pictures, taken from photographs of the Society's annual fruit and Chrysanthemum exhibition, which were greatly appreciated. Advantage was taken to present Mr. John Taylor, gr. at Hoole, the first President of the Society, with an aneroid barometer, on the occasion of his marriage.

Mr. G. P. Miln, the Hon. Sec., announced the names of eighteen new members, and the meeting came to a close.

THE TURNFORD HALL INSTITUTE.

JANUARY 5.—The third annual dinner of the Turnford Hall Nurseries Working Men's Institute was held on the above date in the dining-hall. Mr. Thomas Rochford, the President and Founder again occupied the Chair; the choicest products of the nurseries adorned the banquetting-hall, and a very large number of guests partook of the repast, which the Club itself had catered. There was no official toast list, but one or two speeches were inevitable, though the entertainers, viz., vocalists and instrumentalists, had it almost their own way.

Mr. H. B. May, of Edmonton, proposed the health of the Chairman; and Mr. Rochford, in responding, heartily congratulated the members upon the very respectable manner in which they had conducted the Institute.

The most interesting feature of the concert, which followed the dinner, was the debut of the T.I.M.S., Turnford Institute Musical Society, which was formed only a few weeks ago. Recent innovations include a Mutual Improvement Society and an accession of standard literature, horticultural and general, to the library. Membership is not now confined to the workmen of Turnford Hall Nurseries.

SCOTTISH HORTICULTURAL.

JANUARY 8.—The annual general meeting of the Scottish Horticultural Association was held at 5, St. Andrew Square, Edinburgh, on the above date, Mr. D. P. Laird presiding. The report of the secretary, Mr. R. Laird, showed continued success in all departments of the work of the Association. The membership was close upon a thousand, constituting it one of the horticultural societies of the country. Last year six li's members and 129 ordinary members were added to the roll, while nine members had been removed by death. The treasurer's report, submitted by Mr. McKinnon, showed that the funds of the Society amounted to £241 16s. Both reports were adopted, and a cordial vote of thanks was awarded to Mr. Laird on his retiring from the secretarial duties. The Duke of Buccleuch was re-elected Hon. President, Mr. Charles Comfort was elected President, Messrs. Thomas Fortune, A. Mackenzie, George Wood, and Mr. Laird, Vice Presidents; Mr. Peter Lonie, 6, Carlton Street, Secretary; and Mr. McKinnon, Treasurer. D. T. F.

READING & DISTRICT GARDENERS' MUTUAL IMPROVEMENT.

JANUARY 7.—The annual general meeting of the Reading and District Gardeners' Mutual Improvement Association was held at the Abbey Café on the above date, and notwithstanding the very inclement weather there was a good attendance of members. The President, Mr. C. B. Stevens, occupied the chair for the first part of the meeting, vacating it later for Mr. Leonard G. Sutton, who was elected President for 1901. The other officers elected were Chairman, Mr. T. Neve; Vice Chairman, Mr. H. Wilson; Treasurer, Mr. F. Macdonald; Auditors, Messrs. Badcock and A. Smith; and Mr. H. G. Cox, "Fernlea," Junction Road, Reading, was re-elected Hon. Secretary. Two new members were elected.

MARKETS.

COVENT GARDEN, JANUARY 10.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantums, p. doz.	5 0-7 0	Ferns, small, per	100
Arbor-vita, var. doz.	6 0-8 0	Ficus elastica, each	1 6-7 6
Aspidistras, p. doz.	18 0-36 0	Foliage plants, var.,	each
— specimen, each	5 0-10 6	dozen	1 0-5 0
Cannas, per dozen	18 0—	Lily of Valley, each	1 9-3 0
Crotons, per doz.	18 0-30 0	Lycopodiums, doz.	8 0-4 0
Cyclamen, per doz.	8 0-10 0	Marguerites, per	dozen
Dracenas, var., per	dozen	Myrtles, per dozen	6 0-9 0
— viridis, per doz.	9 0-18 0	Palms, various, ea.	1 0-15 0
Ericas, var., per doz.	12 0-36 0	— specimen, each	21 0-68 0
Eucynoms, various,	per dozen	Pelargoniums, scar-	let, per dozen
Evergreens, var.,	per dozen	— Ivyleaf, per doz.	8 0-12 0
Ferns, in variety,	per dozen	Spiraeas, per dozen	6 0-12 0

VEGETABLES.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe,	per doz.	Horseradish, loose,	per doz.
— Jerusalem, sieve	0 9-1 0	Leeks, per dz. bchs.	1 6—
— Chrysos or	Chinese, per lb.	Lettuce, French	Cabbage, doz.
Asparagus, Spruce	0 8—	Mint, 1er doz.	bunches, new
— Paris Green,	bunch	Mushrooms, house,	per lb.
Beans, dwf. Madeira,	per bkt.	Onions, picklers,	per sieve
— Ch. Islds. and	home, dwf.,	— per bag	cases
new, per lb.	2 0—	— English, p. cwt.	bag
Barb de Capucine	0 4—	Parsley, 12 bunches	per sieve
Beans, French, pkts.	0 5—	Parsnips, in cwt.	bags
Betroot, bushel	1 3-1 6	Potatoes, per ton	80 0-130 0
Beet, per dozen	0 6—	— New, per cwt.	14 0-18 0
Brussel Sprouts, per	sieve	Radishes, per 12	bunches
Cabbage, tatty	2 0—	Rhubarb, Yorks, doz	1 0—
— dozen	0 6—	Salsal, small, pun-	nets, per dozen
Cardons, each	1 0—	Savoys, per doz.	0 6-1 0
Carrots, 12 bunches	2 0-2 6	— per tatty	2 6-4 0
— washed, in cwt.	bags	Scotch Kale, bush.	10—
Cauliflowers, per dz.	1 6-2 6	Seakale, doz. punnets	15 0-16 0
— crate	8 0-10 0	Shallots, new, p. lb.	0 2—
— tatty	6 0-10 0	Spinage, per bushel	3 0-5 0
— Italian, basket	4 6—	— French, crates	4 6-5 0
Celeriac, per dozen	2 6—	Salsafy, bunch	0 4—
Celery, doz. bnds.	10 0-14 0	Tomatoes, Canary	deeps
— unwashed, doz.	8 0-10 0	— per dozen	1 6-2 0
Chicory, per lb.	0 3—	— in bags	1 6-2 0
Cress, doz. punnets	1 6—	Turnip tops, bush.	1 0-1 6
Cucumbers, doz.	3 0-10 0	Watercress, p. doz.	bunches
Endive, new French,	per dozen		
Garlic, new, lb.	0 2—		
Horseradish, Eng-	lish, bundle		
— foreign, pr. bdl.	0 9-1 0		

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Asparagus "Fern,"	bunch	Maidenhair Fern,	per doz. bunches
Carnations, per doz.	blossoms	Marguerites, p. doz.	bunches
Cattleyas, per dozen	blossoms	Mignonette, per doz.	bunches
Chrysanthemums, per dozen	blossoms	— doctoglossums, per	dozen
Gardenias, per doz.	1 6-2 6	Roses, Tea, white,	per dozen
Lilium Harrisii, per	dozen blossoms	— Safrano, per	dozen
Lilium lancifolium	album, per dozen	— Catherine Mer-	met, per dozen
Lilium rubrum, per	dozen	Smilax, per bunch	3 0-5 6
Lilium longiflorum,	per dozen	Tuberose, per doz.	blossoms
Lily of Valley, per	doz. bunches		

FRUIT.—AVERAGE WHOLESALE PRICES

	s. d. s. d.		s. d. s. d.
Apples, English,	per bushel	Grapes, Colmar, B...	0 9-1 0
cookers, large	3 6-5 6	— Muscat, A., per	lb.
various	2 0-4 6	— B., per lb.	4 0-6 0
Blenheims, bush.	4 0-7 6	— Almeira, doz. lb.	1 6-2 0
— Nova Scotia,	per barrel	Lemons, case	7 6-9 0
— Californian, per	box	Lychees, new, pkt.	1 0—
Bananas, bunch	7 0-11 0	Oranges, Navel	16 0—
— loose, per doz.	1 0-1 6	— Blood	10 0—
Cobnuts, lb.	0 4 0-4 1	— Murcia, case	6 6 7 0
Cranberries, case	12 6—	— Tangerine, box	0 6-1 0
— quart	0 6—	— Jaffa, case	8 6-10 0
Russian kegs	2 0—	— Valencia	13 0—
Chestnuts, per bag	6 0-10 0	Pears, Californian	Winter Nelis, case
— Italian, " "	17 0-18 0	— stewing, case	2 0—
Custard Apples, per	dozen	— Californian East-	ter Beurre, half
dozen	4 0-10 0	case	8 6-9 0
Grapes, Alicante,	per lb.	Pines, each	2 0-4 0
— Colmar, A.	1 3-1 6	Sapucaia nuts, lb.	1 8—
		Walnuts, cwt.	38 0—

REMARKS.—The frosts have affected the supply of Spinach and Sprouts, but it is quite equal to demand. The price of Seakale has advanced, and that of Rhubarb declined. There is little alteration in the price of other supplies.

POTATOS.

Various sorts, 80s. to 100s. per ton; foreign bags, 50 kilo. 3s. to 4s. 6d.; Danbars Maincrop, 130s.; Up-to-Date, 100s. to 125s. John Bath, 32 & 34, Wellington Street, Covent Garden.

FRUIT AND VEGETABLES.

GLASGOW: January 9.—The following are the averages of the prices recorded since our last report:—Apples, Canadian Kings, 20s. to 24s. per barrel; Baldwin, Spies, Greenings Russets, &c., 14s. to 18s. do.; Americans, various varieties, 13s. to 17s. do.; Maine and Boston Apples, various, 11s. to 15s. do.; Californian Newton Pippins, 4s. 8s. to 8s. 6d. per case; 5s. 7s. to 7s. 6d. do.; Bananas, extra, 12s. to 13s. per bunch; No. 1, 10s. to 11s. do.; No. 2, 8s. to 9s. do.; Pears, Paris, per crate, Easter Beurre, single layers, 4s. 6d. to 5s. do.; Californians, various, 12s. to 15s. per case; Oranges, Valencia, ordinary, 420's, stamped papers, 9s. 3d. to 9s. 9d. per box; do., plain papers, 8s. 6d. to 9s.; large 420's, stamped papers, 12s. 6d. to 13s.; do., plain papers, 11s. 6d. to 12s. 6d.; extra large 420's, stamped papers, 13s. to 15s.; do., plain papers, 13s. to 14s.; large and extra large 74's, 13s. to 14s. per case; Lemons, Messina, 10s. to 14s. per case; Grapes, English, new, 1s. to 2s. per lb.; Mushrooms, 1s. to 1s. 8d. per lb.; Tomatoes, Canary deeps, finest medium, 4s. 9d. to 5s. per box; others, 3s. to 4s. do.; Onions, Valencia, 4s. 5s. 9d. to 6s. per case; 5s. 6s. 3d. to 6s. 6d. do.

LIVERPOOL: January 9.—Wholesale Vegetable Market. Potatoes, per cwt.: Lynn Gray, 3s. 6d. to 3s. 10d.; Bruce, 3s. 6d. to 4s. 3d.; Up-to-Date, 3s. 8d. to 4s.; Main Crop, 4s. to 4s. 6d.; Turnips, 6d. to 9d. per dozen bunches; Swedes, 1s. 4d. to 1s. 6d. per cwt.; Carrots, 2s. 3d. to 3s. 3d. per cwt.; Onions, English, 5s. to 5s. 6d. per cwt.; ditto, foreign, 3s. to 3s. 6d. per cwt.; Parsley, 10d. to 1s. per dozen bunches; Cauliflowers, 1s. 6d. to 1s. 6d. per dozen; Cabbages 6d. to 10d. do.; Celery, 8d. to 1s. 6d. per dozen. St. John's: Potatoes, 1s. 2d. per peck; Grapes, English, 2s. to 2s. 6d. per lb.; do., foreign, 6d. to 8d. do.; Pineapples, English, 5s. each; Apples, 2s. to 4d. per lb.; Pears, 6d. do.; Tomatoes, 6d. do.; Asparagus, 1s. per bundle; Cucumbers, 1s. 6d. each; Mushrooms, 1s. 4d. per lb. Birkenhead: Potatoes, 1s. to 1s. 3d. per peck; Cucumbers, 6d. to 1s. each; Grapes, English, 1s. 6d. to 3s. 6d. per lb.; do., foreign, 4d. to 8d. do.; Mushrooms, 1s. to 1s. 6d. do.; Fibrets, 10d. per lb.

SEEDS.

LONDON: January 9.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that there were but few buyers on to-day's market, and not many transactions were concluded. Meantime, Grass and Clover seeds keep steady in value, whilst American Red is cabled dearer. Very high rates are still asked for Königsberg Tares. The Canary seed market shows a further advance, and Hemp seed continues scarce and firm. There is no alteration in Millet seeds. Full prices are asked for Mustard and Rapeseed. The severe weather naturally improves the demand for consumption of blue Peas and Haricot Beans; as regards the latter, some considerable quantities have recently changed hands at 1s. per qr. advance.

CORN.

AVERAGE PRICES of British Corn (per imperial qr.), for the week ending January 5, and for the corresponding period of 1900, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1900.	1901.	Difference.
	s. d.	s. d.	s. d.
Wheat	25 9	26 5	+ 0 8
Barley	25 7	25 4	- 0 3
Oats	16 2	17 2	+ 1 0



METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period December 30 to January 5, 1901. Height above sea-level 24 feet.

1900-1901.		DIRECTION OF WIND.	TEMPERATURE OF THE AIR.				TEMPERATURE OF THE SOIL AT 9 A.M.				RAINFALL.	LOWEST TEMPERATURE ON GRASS.
			At 9 A.M.		Day.	Night.	At 1-foot deep.	At 2-feet deep.	At 4-feet deep.			
			Dry Bulb.	Wet Bulb.								
			DECEMBER 30	TO	JANUARY 5.	Dry Bulb.	Wet Bulb.	Highest.	Lowest.	Dry Bulb.			Wet Bulb.	Highest.	Lowest.
SUN. 30			S.S.W.	45.6	44.9	52.0	33.9	0.62	42.7	45.8	48.3	25.0
MON. 31			E.N.E.	43.9	42.7	44.9	39.0	0.01	43.1	45.6	48.2	37.7
TUES. 1			S.S.E.	37.0	35.6	39.7	36.6	...	42.9	45.6	48.1	35.5
WED. 2			S.S.W.	33.2	32.9	44.6	33.2	...	42.9	45.5	48.1	32.2
THU. 3			W.N.W.	44.5	33.2	40.1	30.0	...	41.1	45.2	48.0	22.5
FRI. 4			E.N.E.	38.2	37.8	38.4	34.3	...	41.1	44.6	48.0	30.0
SAT. 5			E.N.E.	29.0	28.2	23.7	12.5	...	40.4	44.4	47.8	25.9
MEANS...		...		37.3	36.5	42.4	33.6	0.63	42.0	45.2	48.1	29.8

Remarks.—The weather during the latter part of the week was characterised by dense, smoky fog and cold biting winds from the North and East.

GENERAL OBSERVATIONS.

The following summary record of the weather throughout the British Islands, for the week ending January 5, is furnished from the Meteorological Office:—

"The weather was very unsettled and rainy at the commencement of the week, especially in the south and east; later on, the conditions improved considerably, and finally became fair and dry generally, although fog was experienced in some parts of England.

"The temperature was rather high during the first few days, but subsequently fell briskly, and became somewhat low. The average for the week did not therefore differ much from the mean, but was slightly above it in Scotland and Ireland, as well as in the Channel Islands. The highest of the maxima were mostly recorded either on Sunday or Monday, and ranged from 54° in Scotland, N., and the Channel Islands, and 53° in England, S. and S.W., to 47° in Scotland, E., and England, N.E. The lowest of the minima, which were registered on December 30 in the North, and on January 5 elsewhere, ranged from 22° in England, E., and 23° in England, S., to 30° over Ireland, and to 34° in the Channel Islands.

"The rainfall was less than the mean in Ireland, Scotland, England, N.W., and the Channel Islands, but more in all other districts. In the Midland Counties, E. and N.E. England, and in some parts of England, S.W., the excess was very large, and was due almost entirely to a heavy fall which occurred on Sunday, December 30. The largest amounts experienced on this day at any of our stations were 2.95 inches at Bath, 2.15 inches at Clifton, 1.95 inches at Shaftesbury, 1.24 inches at Falmouth, 2.20 inches at Cirencester, 2.05 inches at Hereford, 2.04 inches at Birmingham, 2.38 inches at Colley Weston, 2.05 inches at Fulbeck, and 1.54 inch at Hillington.

"The bright sunshine exceeded the mean in most parts of the kingdom, but was deficient over the northern and north-eastern parts of Great Britain. The percentage of the possible duration ranged from 40 in the Channel Islands, and 39 in Ireland, N., to 11 in Scotland, E., and to 9 in Scotland, N., while in England, N.E., bright sunshine was altogether absent."

THE WEATHER IN WEST HERTS.

A cold week. Previous to which the weather may be said to have remained more or less unseasonably warm since October 28. At all events, during those ten weeks there were only ten cold days, and about the same number of cold nights. On two days during the past week, the highest shade temperature was 3° below the freezing-point, and on the coldest night the thermometer exposed on the surface of the snow, showed 14° of frost. The ground has been getting gradually colder as the week advanced, and is now about 1° colder at one foot deep than is seasonable, but at two feet deep the temperature is still rather higher than the January average. No rain worth mentioning has as yet fallen this month, but on the 7th and 8th, sufficient snow fell to cover the ground to the mean depth of three inches. About a gallon of rainwater came through both percolation gauges during the week, but rather more through the bare soil than through the turfed soil gauge. The duration of bright

sunshine was very good for the time of year, the total record amounting to nearly ten hours. The air was very humid at the beginning of the month, but for the last few days the atmosphere has been, on the contrary, unusually dry for January. The last Rose bloom of the season in the open ground was destroyed by frost on the 6th inst., or exactly a month later than the average date of its destruction in the previous fifteen years, and later than in any but the first of those years, 1885, when the same date was recorded. E. M., *Berkhamstead*, January 8, 1901.

ENQUIRY.

VIOLETS.—Will some correspondent of the *Gardeners' Chronicle* kindly inform "California" which varieties of Violets make runners, and which, like Wellsiana, make but few, if any.

ANSWERS TO CORRESPONDENTS.

BROCCOLI DISEASED: H. T. H. The minute blackish spots on the leaves are caused in the first instance by the punctures of aphides or insects. These diseased points have in some instances been attacked by various kinds of minute fungi, which are not likely to do any harm during this cold weather. There is no definite fungus parasite present. G. M.

CHRYSANTHEMUMS AND PEACHES: Peach. You have bungled badly, for in trying to save the flowers of the Chrysanthemums from damping, you have raised the temperature of the Peach-house so much that the trees began to grow, and then the Chrysanthemums being over, you threw the house open to the weather. Is it a matter for wonder that the flower-buds drop off, and have dropped off for several years? Another year use but little fire-heat to drive out damp, doing this in the forenoon of fine days with good ventilation afforded at the same time. Examine the border low down—it may be very dry, although moist at the top. This is another cause of bud-dropping.

CORRECTION: PARENTAGE OF CYPRIPEDIUM BURBURYANUM. In our issue of January 5, owing to a clerical error, C. Boxalli and × Spicerianum were given as the parents of C. Burburyanum, instead of C. Boxalli and C. × plunierum.

DAISIES ON THE LAWN: J. O. M. If the turf is much infested with Daisies, you cannot extirpate them unless at great cost. It is better in such cases to bastard-trench the land, say one spit, and the top shovelled off into the bottom of the trenches, thus burying the Daisy-infested sod so that none of the plants can get through the soil. The neglect to spud-out Daisy-plants as soon as observed on a previously clean lawn, the proximity of pasture land, or the use of the mowing-machine at weekly intervals of time, are fruitful causes of the spread of Daisies. Get clean lawn grass seed from a trustworthy source.

DONATION FOR THE ROYAL GARDENERS' ORPHAN FUND: J. G. W. We shall have pleasure in forwarding the P.O. for five shillings to the Treasurer.

FLOWERING THE SECOND TIME OF LILY OF THE VALLEY: G. T. As it is the three-year-old buds that produce the flowers, and these, and the second, and one year growths must be made in the open ground, either separately as crowns, or altogether as clumps. The growth made under glass by plants that have been forced, whether retarded or non-retarded, being too weak to afford good blooms.

GARDENERS' CHRONICLE FOR THE YEAR 1843: J. R. You should advertise the sale of the volume in this Journal.

GARDENIA SICKLY: G. C. B. The pale tint of the leaves may be the result of too much moisture at the root, bad drainage of the soil, of cold, of sudden fluctuations of temperature, over-potting, allowing insect washes (especially those containing petroleum) to penetrate the soil and reach the roots. Which of these is the cause in your case we are unable to tell you.

HORTICULTURAL JOURNALS IN THE FRENCH LANGUAGE: G. D., *Prague*. In addition to the one you subscribe to, there are the *Moniteur Horticole*, and *Revue de l'Horticulture Belge*.

LANDSCAPE GARDENING IN SOUTH AFRICA: *Constant Reader*. The chances of obtaining remunerative employment as a landscape gardener are very remote. Many a year must pass before

there arises a leisured class that will occupy itself with ornamental gardening. We should rather suppose that raising forest or fruit trees and market gardening would afford better remuneration, especially in the neighbourhood of the larger towns. In Natal, in the country near the sea, many tropical fruits and commercial plants succeed, and at a higher elevation the Vine, Oranges, Lemons, Peaches, Apricots, &c., would afford profitable employment for capital. Really good fruit is almost unknown, seedlings being mostly grown, and no careful crossing performed to obtain fine varieties.

NAMES OF FRUITS: Nutting & Sons. Apple, Barnack (see *Gard. Chron.*, Sept. 29, 1900, p. 251).—*Ascot*. Pear, 1, Verulam; 2, unknown; Apple, 1, Hollandbury; 2, Bleinheim Pippin; 3, Waltham Abbey Seedling; 4, Smart's Prince Arthur; 5, Tower of Glamis.—X. 1, Hambleton Deux Ans; 2, Emperor Alexander; 3, Striped Beefing; 4, unknown; 5, Baumann's Red Winter Reinette; 6, Hanwell Souring.—J. H. 1, Lane's Prince Albert; 2, Norfolk Stone Pippin; 3, Pitmaston Golden Wreath; *Constant Reader*. 1, Holland Pippin; 2, Royal Russet; 3, Herefordshire Beefing; 4, Dr. Harvey; 5, Emperor Alexander; 6, Brabant Bellefleur.—*Orchard*. 1, Round Winter Nonsuch; 2, Hunthouse; 3, Blenheim Pippin; 4, Hormead Pearmain; 5, Green Woodcock; 6, Scarlet Leadington.—*Edgar*. 1, Beurri Sterckmanns; 2, Doyenné d'Alençon; 3, Martin Sire.—T. W. F. 1, excellent samples of Winter Pearmain; 2, Hanwell Souring; 3, Lewis's Incomparable.—O. L. Next week.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—Sir C. S. Pinus ponderosa var. Benthamiana.—E. A. F. P. Cœlogyne barbata.—R. W. R. Your flower seems almost identical with the old Cypridium insigne punctatum violaceum, illustrated in the *Gardeners' Chronicle*, December 2, 1882, p. 717, which by some was considered to be not a true C. insigne, but a form of C. × nitens.—I. P., *Dundee*. Celsia cretica.—H. V. W. Cannot name florists' varieties of Ranunculus.

NECTARINE WOOD: C. Hunt. Immature and improperly ripened. Lift the roots, or replant entirely, bringing most of the roots to within 6 inches of the surface of the border. Use good, turfy loam $\frac{3}{4}$, lime rubble and short dung in a decayed state, together, $\frac{1}{4}$; placing some of this below and over the roots as well as mixing it with the staple. Make the land firm, and afford a strawy mulch over the disturbed soil. Dress the tree with Gishurst Soap at the rate of 3 ounces to the gallon of water, or use Petroleum Emulsion, as sold by the florists; or make your own with 1 gallon of hot water, 4 ounces of soft soap, and a wineglassful of petroleum. Mix well, keep stirred, and apply with a brush or a syringe.

NORTHAMPTONSHIRE: G. T. The highest land in the county is about Daventry, where Arbury Hill rises to the height of 804 feet. The general level is about 300 feet above sea-level. The north-east extremity of the county, near Peterborough, is only a few feet above sea-level. The exact elevation of Rockingham is unknown to us.

YEW GALLS: J. M. C. The peculiar growths you mention are the result of the attacks of a mite.

COMMUNICATIONS RECEIVED.—E. B.—J. B.—M. Chatenay.—P. de V.—M.—M. F. H. J. V.—A. K.—S. A. and others are heartily thanked for their congratulations.—A. C.—A. W. W.—W. T. D.—W. G. S.—A. H., with thanks.—C. W. C.—E. W. R.—G. J. I.—W. J. C.—S. W. F.—E. A. F. P.—W. H. S.—C.—Coutances.—T. V.—W. S.—J. W. G.—F. G. B.—J. O. B.—A. & B., Ltd.—E. A. Bowles.—F. B.—Caledonius.—J. O. C.—W. A. C.—J. M.—T. T.—S. A.—J. J. W.—O. L.

PHOTOGRAPHS RECEIVED WITH THANKS.—A. C.—Miss G.

GARDENING APPOINTMENTS.

MR. JOHN WALKER, late of Waltham, Grimsby, as Gardener to WM. HILL, Esq., Sunnyside, Cleethorpes, Grimsby.
MR. GEORGE CYPHER, as Gardener and Orchid Grower to S. GRATRIX, Esq., West Point, Whalley Range, Manchester.
MR. G. D. McCORMACK succeeds Mr. BALLANCE as Head Gardener to F. DARWEN, Esq., Kreskeld Hall, Arthington, Leeds.
MR. THOS. GRANT, for the past nine years Head Gardener at Serlby Hall, Bawtry, as Head Gardener to Lady CHICHESTER, Arlington Court, Barnstaple, Devon.



GUNNERA MANICATA AT STRAFFAN, CO. KILDARE (MAJOR H. I. L. BARTON).



THE

Gardeners' Chronicle

No. 734.—SATURDAY, JAN. 19, 1901.

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HYBRIDISATION IN AMARYLLÆÆ.

I PURPOSE in this article to deal with hybrids that have been raised in gardens between individuals of this sub-order, from warm, temperate, tropical, and equatorial regions, differing from each other specifically (or in a higher degree), and especially with the few that have come under my own observation in a living state.

I have purposely excluded the Narcissi, and two other genera hardy in Great Britain (*Galanthus* and *Sternbergia*), partly because I have not made a special study of them, and partly because the subject of hybridisation within such limits has already been dealt with by expert writers.

One generalisation, however, is not out of place here. The habitat of the Narcissi is over a comparatively restricted area, and the fact that so many alleged hybrids have originated in a natural state without human interposition, coupled with the ease with which hybridisation is effected in gardens, indicates that the whole genus has within comparatively recent times sprung from one prototype. Even between the extreme types of this genus exist regular gradations of individuals, each differing in some respect from each other—there is hardly one link missing in the chain.

This, again, points to a period of time, by no means lengthy, antecedent to which the genus

was represented by only one, or at most very few, types or species; for this period has not been long enough for any number of the intermediate types to die out. Hence it follows that if the bulk of species of *Narcissus* are of recent establishment, the relationship existing between them is closer, and their individual characters not so irrevocably fixed, as is the case in other genera in which no break has occurred for an enormous period of time.

The hybridisation of Narcissi is, therefore, an occupation in which the chances of success are so great as to amount to a practical certainty. But when attempts are made to hybridise, say, the *Crinums* of Asia or Africa with those of America, the chances are equally great against a successful issue. Yet the prize is great, too, for success establishes a fresh epoch in that branch of horticulture, and opens fresh possibilities and fresh avenues of enterprise for all to profit by.

Among the genera specially dealt with in this article, forty-seven in number, only one, *Hippeastrum*, has become generally recognised among florists as worthy of special treatment.

It is a matter of general belief that the first hybrid raised was *H. Johnsoni*, about 1799, and that from this and other subsequent crosses the present race of mongrels has been evolved.

Yet this fact has for many years stood out in my mind as of paramount importance, that if a botanist were to find growing wild all the *Hippeastrums* cultivated to-day at our most notable professional establishments, he could not, at the outside, make more than two species out of them. Out of these, *H. vittatum*, remains just as it was nearly one hundred years ago in all its principal specific characters; it is certainly bigger, wider in the segments, more expanded in the flower—it has, in short, been “improved,” but it has not been altered. I can see no evidence of hybridisation, no evidence of anything further than selection and good cultivation would naturally produce.

I have only once seen a form of *vittatum* which in my estimation showed a probable hybrid origin. This came to me from the West Indies under the name of “Defiance,” but no information as to origin or parentage were forthcoming. It is a small-flowered, brilliantly-coloured form, resembling that figured in *Bury, Selection of Hexandrian Plants* (1831), tab. 31, as “superba,” but remarkable for having the typical vittate marks obscured towards the base of the upper segments by red suffusion. The style is also ascending to an unusual degree, and carries the stigma as high as the tip of the upper segment at maturation. I have raised hundreds of seedlings from dozens of alleged hybrids bearing the typical vittate markings, and these have all come as true from seed as any good species would do.

In these experiments I have obtained the alleged hybrids from a variety of sources, both British and continental. I have also attempted, times without number, to implant the vittate markings upon self-coloured forms, such as “equestre,” and *vice versa*; but without any results so far, although I have now some promising supposed hybrids with “aulicum.”

The other species which the botanist could form has no exact counterpart in nature. It has a short, wide-segmental, well expanded, large, substantial flower, with the hairy throat of “equestre major,” the colour most commonly of “equestre,” and “rutilum” (rarely of “aulicum”), and the keel markings of “reginæ.” The colours are now very varied, and the rarer colours, especially the coppery-reds and those

nearest white, have of late been diligently sought and selected, and hence have increased in collections at the expense of the eliminated colour varieties.

Recently some pure self reds have appeared in collections, and these at first caused some speculation, although it is admitted that in all parti-coloured or “marked” flowers there is a tendency for selfs to appear at times spontaneously among the seedlings. (I had an example last summer, where out of some thousand “Cloth of Gold” Marigolds, three plants reverted to pure yellows.)

I have always held to the theory that if we could only look back far enough into the past we should see that the first parents of all our parti-coloured or marked flowers were selfs, and inconspicuous-coloured at that. Hence the appearance of selfs among our collections of seedling *Hippeastrums* did not surprise me in the least, although I was unaware of any coloured selfs among good species.

In the summer of 1895, however, I received from Brazil a box of bulbs which proved to be those of *H. stylosum*, and among these were a few bulbs of a self-red species hitherto undescribed, for which Mr. Baker, on examination of the flowers, suggested the very appropriate name of *H. tricholepis*, described and figured in *M.S.S.*, Feb., 1896. This was an interesting incident, not as tending to disprove the assertion of alleged hybridisers—that they had introduced something new to the genus in their self-coloured reds, but as putting forward a tenable proposition that the result of their efforts had caused a colour reversion to some ancestral type, such as might have occurred in any seedling.

On the same hypothesis, it is easy to account for the occasional appearance of a few whitish, or greenish-white, seedlings.

Having described these two species, a botanist could do no more. Out of the twenty species which, according to Mr. Baker, belong to the subgenera (*Macropodastrum*, *Omphalissa*, *Aschamia*, and *Lais*), and which may be said to constitute the true *Hippeastrums*, seventeen have been at some time common in cultivation. Of these seventeen common species, the alleged hybridisers have succeeded in perpetuating one (*vittatum*), and four others in one composite form. No traces of the remaining twelve exist. Where can we find the habit or colour of *procerum*, the habit of *solandri-florum*, or *Cybister* (so remarkably distinct), the spreading stamens of *calyptratum*, the spots of *pardinum*, the double flowers of *Alberti*, or the marvellous markings of *Leopoldi* or *reticulatum*?

Some say that the pre-potency of certain species has extinguished the weaker blood of the rest (?). If so, that is an effect which intelligent persons would be expected to fight against. It is a certain fact that the species of which all traces have disappeared are not long-lived as individuals, nor good seed-bearers under cultivation.

If on the top of this the efforts of our hybridisers to impregnate other species with their pollen were ineffectual, their ultimate disappearance is easily accounted for, without having to call in any speculative ideas. My belief is that there has not been so much genuine hybridisation among the *Hippeastrums* as we have been led by some to think; yet the fact remains that something has been done, and that the blood of some four species runs in our present mongrel race.

Messrs. Veitch have done great work among the garden forms, and have produced a race of

large-flowered mongrels. They were the introducers of *H. pardinum* and of *Leopoldi*, and many people lay great stress on the improvement caused by these introductions. But to my mind it is very doubtful to what extent, if at all, their blood runs in the existing garden mongrels. No doubt many attempts were made, and seedlings raised, but Mr. Harry Veitch himself records in his contribution to the issue of the *Journal of the R.H.S.*, July, 1890, that "many of them," the supposed hybrids, "came so near the species as to be practically the same thing, or the same but slightly varied, yet we are able to select several distinct new forms showing a marked improvement on their progenitors in breadth and substance of segment, size and symmetry of flower, &c." This certainly shows careful selection, but disproves hybridisation.

When we try to discover when and by whom hybridisation has been effected, we are met by grave difficulties. Mrs. Bury's work, published in 1831, just when the early hybridisers were in full swing, figures four supposed hybrids, and these figures may reasonably be held to give us either the whole of the ascertained hybrids that had up to then been flowered, or at least the most remarkable of them. For it cannot be supposed that a work got up at such expense and with such care would have figured the least noteworthy forms. Yet among the four figured there is not one solitary case in which specific hybridisation had undoubtedly taken place. At best we have to deal with guesses and suppositions, which subsequent writers have treated as though they were dealing with ascertained facts.

(To be continued.)

NEW OR NOTEWORTHY PLANTS.

CEREUS WITTII (K. Sch.).

AMONG the numerous novelties which the last decade of the past century brought to Europe, the above-named is surely one of the most interesting for both the amateur and the professional cultivator. I received this curious plant through the kindness of Mr. N. H. Witt, of Manaos, Erlado do Amazonas, Brazil. He told me long before he was able to send specimens that a climbing species of a genus he was not able to determine, grew in the swampy forest, or Igape, on the Amazon river. Closely appressed to the stems of the trees, and fixed to them by numerous roots, in the region of the yearly inundation, there creeps a Cactus with the habit of a *Phyllocactus*, but armed with very sharp spines. It is so closely connected with the plant on which it grows that one must look carefully to distinguish it. In fig. 17 the Cactus is represented creeping over a Palm stem which is provided with great thorns, that prevent the Cactus from being removed from the bark. The joints have been therefore bent and broken, to avoid the thorns, and that enables the Cactus to be more readily recognised.

When I had the specimen in my hand after it was taken out, I did not at all know how to class it. I was not able even to indicate the genus. It could not belong to *Phyllocactus*, however much the form of the leaf-like joints suggested that genus. Perhaps it might be a very abnormal species of *Rhipsalis*, but the flowers or fruits being absent, the question could not be answered.

Last autumn I was fortunate enough to get, by the aid of Mr. N. H. Witt, plentiful specimens of the plant. After having carefully examined it, I found two fruits of ovoid form as large as a pigeon's egg, beset with very sharp prickles. This organ had all the characteristics of the genus *Cereus*, and I could now name the species, and did so in honour of the finder, *Cereus Wittii*. The species is very

interesting, because it is the "missing link" between the genera *Phyllocactus* and *Cereus*. The form of the joints is perfectly typical of the former; the characteristics of the fruits and spines are those of a *Cereus*.

Some days ago I received a notice from Dr. E. Ule, a botanist, whom I had sent from Manaos to the river Furná, a tributary stream on the right side of the Amazon—that he had found a peculiar Cactus in the upper part of the swampy forest,



FIG. 17.—*CEREUS WITTII*, A CLIMBING CACTUS.

The right-hand branch shows the Cactus appressed to the stem of a Palm; the joints have been represented as more conspicuous than they really were in the photograph. The left-hand branch has been broken at intervals to detach the joints of the Cactus and render them visible.

densely appressed to the tree-stems. His further description of the plant informed us that *C. Wittii* is widely distributed. He told me that the older joints of *C. Wittii* turn from green to a beautiful wine-red or purple colour, a peculiarity which I had also seen on the plants we cultivate in the Royal Botanic Garden of Berlin.

The two photographs were taken by our skilful Orchid gardener, Herr Benick, who also cultivated these two splendid specimens. *K. Schumann, Berlin*. [In the photographs the articuli or joints were not so conspicuous as they are seen in the reproduction. Tufts of small prickles stud the edges. Ed.]

NOVELTIES OF 1900.

STOVE AND GREENHOUSE PLANTS.—Among these plants imported we have not much to chronicle of great merit. Messrs. James Veitch & Sons, Chelsea, have continued the improvement of their noted strain of florists' *Hippeastrums*, two of the best being *Zephyr* and *Titan* (certificated); their useful warm-house *Rhododendrons* have been increased by several handsome new varieties, the floriferous, neat and bushy-habited multicolor varieties being specially desirable. *Rhododendron Coombe Royal* is a certificated novelty of a charming kind of a new section of hybrid Himalayan *Rhododendrons*. Improvements in *Clivias*, *Phyllocacti*, *Streptocarpus* × *achimenes* flowers, and the other specialties of the Chelsea firm, have been effected, and the new *Nepenthes* × *Sir W. T. Thistleton-Dyer* is one of the largest and showiest, either of the species or crosses. Messrs. Veitch also showed the new, bright blue, *Coleus thyrsoides*.

Messrs. F. Sander & Co., of St. Albans, showed a fine group of the last-named plant at the last meeting of the Royal Horticultural Society for 1900. At their establishment at Bruges they are extensively and successfully cultivating and raising Indian *Azaleas* and *Camellias*, and one of the best of their *Camellias*, *Hector Macdonald*, received a Certificate in England. Among other meritorious new plants of this firm may be mentioned the graceful *Asparagus Sprengeri variegatus* and *Tacsonia* × *militaris*.

Messrs. Sutton & Sons, Reading, who have been the lucky introducers of so many fine florists' flowers, began the year 1900 with, on January 9, a fine display of their delicately tinted "Star Primulas," which seem to embody all the requirements of a desirable flower, the plant growing quickly to a fine size and making literally a mass of bloom. Their decorative strain of *Cinerarias* also belong to the same class of plants, and for the lovers of the old-fashioned larger-flowered but less floriferous class their many novelties in that direction leave little to be desired.

In the same field Messrs. Carter of Holborn, Cannell & Sons, Swanley, and others have produced good novelties, the best of which will be found in the appended list of new or rare plants illustrated in the *Gardeners' Chronicle* in 1900.

Rhododendrons, owing to the efforts of amateurs, have shown good advances during the year, some of the hybrids from Himalayan species being very charming. Of the best were *R. "Pink Pearl,"* a hybrid of *R. Aucklandi*, certificated to Sir Trevor Lawrence, Bart. (gr., Mr. Wm. Bain). Dr. Stocker, Avery Hill, Eltham (gr., Mr. G. Abbey), showed some charming hybrids, the best which secured awards being *R. × Dr. Stocker*, the result of crossing *R. ponticum* with a Himalayan species; and *R. × Abbeyi*, the latter a white, and the former a rose-pink flower, both with attractive spotting on the upper segments. D. H. Shilson, Esq., Tremough (gr., Mr. Gill), showed the fine *Rhododendron* × *Shilsoni* and a pretty collection of seedlings on April 10, and further developments in the same direction are in progress.

Another charming introduction of the year was the Wiseton strain of *Schizanthus*, staged by Messrs. Hugh Low & Co. at the Temple show; and the tuberous and other *Begonias*, *Cannas*, *Chrysanthemums*, and other great classes of flowers have all been induced to yield pretty novelties. Of such, the pure white *Begonia Gloire de Lorraine* (Caledonia) of Mr. John Forbes, Hawick, Scotland, is a charming novelty, which will be grown in large quantities like its better-known pink form.

Of newly imported novelties, Messrs. Linden, Horticole Coloniale, Brussels, have the best record, most of their new plants having been illustrated by us during the year.

HARDY PLANTS.

Messrs. Ware, Perry, Wallace of Colchester, Kelway of Langport, H. J. Jones of Lewisham, and others have been successful in producing novelties in their specialties; and the rosarians and Dahlia-

FIG. 18.—*COLEUS THYRSOIDEUS*: COLOUR OF THE FLOWERS COBALT-BLUE.

(SEE P. 40.)

growers have kept their lists of new varieties, as in previous years, supplied with subjects, some new and desirable, and others sufficiently distinct for specialists.

Mr. Jas. Douglas, from out of his extensive collection of Carnations at Bookham, showed some good novelties, those named Bomba, Benbow, and Midas getting the Royal Horticultural Society's Award of Merit.

Messrs. Cutbush, Highgate, showed Carnation Herbert J. Cutbush, a large scarlet-coloured flower, at the Temple show, and received a very well-merited award for it. At a later meeting the fine Carnation "Fanny Wilcox" and others were shown by Messrs. Cutbush, who are very fortunate in keeping their stock healthy and floriferous.

Messrs. Cuthbert, Southgate, have shone in hardy species and varieties of Azaleas, and other decorative plants; the Narcissi, which are deservedly among the most popular of our garden flowers, have been recruited by sterling novelties, and in most of the other classes some satisfactory additions have been obtained. More comforting even than present successes is the knowledge that efforts are being made to search for and import new greenhouse and hardy shrubs from China and other parts. Even after they are successfully imported, novelties of those classes require a considerable length of time before they can be distributed and the introducers find their reward. No one should rejoice more than the hybridist, to whom the fresh material upon which to work will be of great value.

The following novelties and rare plants were illustrated in the *Gardeners' Chronicle* in 1900:—

- Agapetes buxifolia, March 31, p. 197.
- Alsophila Loubetiana, Nov. 3, p. 328.
- Anemone japonica Mont Rose, September 22, p. 229.
- Ardisia Brandneriana, Nov. 3, p. 321.
- Asparagus Duchesnei, Oct. 27, p. 305.
- Asparagus umbellatus, Nov. 24, p. 379.
- Asclepias Halli, Sept. 28, p. 183.
- Azalea Duchess of Wellington, April 28, p. 261.
- Bamburanta Arnoldiana, Oct. 27, p. 313.
- Begonia "Dorothy Hardwick," Nov. 10, p. 344.
- Begonia "Marchioness of Bath," Nov. 10, p. 343.
- Begonia "Mrs. John Heal," Nov. 24, p. 371.
- Brocchinia cordylinoides, Sept. 8, p. 183.
- Brodiaea Sellowiana, March 3, p. 133.
- Byblis gigantea, Nov. 17, p. 351.
- Calathea crocata, August 11, p. 113.
- Callipsyche mirabilis (Supplement), March 31.
- Campanula persiciflora Moerheimi, June 30, p. 414.
- Carnation "Beauty of Exmouth," September 8, p. 193.
- Carnation "Herbert J. Cutbush" (Supplement), May 26.
- Chrysanthemum indicum (type), November 10, p. 334.
- Clematis "Duchess of York," July 21, p. 43.
- Cryptostemna lusitanicum, December 1, p. 391.
- Decabelone Barklyi, April 7, p. 210.
- Dichorisandra Thysiana, October 27, p. 302.
- Ficus Eetveldiana, October 27, p. 303.
- Galanthus nivalis Scharloki, February 17, p. 99.
- Gymnopsis uniseriata, September 1, p. 165.
- Helichrysum Gulielmi, November 10, p. 334.
- Hidalgoa Wercklei, August 4, p. 83.
- Hymenocallis Montziana, February 10, p. 89.
- Iris Danfordiae, March 17, p. 170.
- Iris stenophylla, March 17, p. 171.
- Iris urmiensis, November 24, p. 373.
- Jasminum angulare, November 17, p. 360.
- Leptosyne gigantea, November 3, p. 319.
- Lilacs (4 new), February 24, p. 115.
- Mesembryanthemum truncatellum, April 7, p. 211.
- Narcissus "Wilhelmina," May 5, p. 283.
- Nepenthes Sir W. Thiselton-Dyer, October 6, p. 257.
- Panax Mastersianum, June 23, p. 399.
- Platycodon grandiflorum semi-duplex, Sept. 22, p. 223.
- Polygonum scandens, September 8, p. 187.
- Primula \times Kewensis, March 31, p. 195.

Primula "The Duchess," February 3, p. 67.
Primula sinensis (Carter's new), March 3, p. 141.
Rhododendron "Pink Pearl," July 23, p. 63.
Rhododendron grande, February 17, p. 105.
Rose Pink Roamer, July 14, p. 23.
Rose Tennyson, June 23, p. 395.
Roupellia grata, August 25, p. 151.
Schizanthus (Wiseton), June 9, p. 361.
Solanum Worsleyi, January 13, p. 19.
Sternbergia colchiciflora, October 6, p. 265.
Strawberry St. Antoine de Padoue, July 28, p. 67.
Strawberry "Trafalgar," June 23, p. 397.
Tacsonia \times *militaris*, November 24, p. 383.
Tagetes Lemmonii, January 13, p. 19.
Thalictrum Chelidoni, September 1, p. 167.
Tulipa Borszewi, May 19, p. 309.
Vernonia scorpioides, August 18, p. 125.

COLEUS THYRSOIDEUS.

A PLANT which gives cheerful blue flowers in the winter season is decidedly an acquisition in conservatories. Our illustration (fig. 18) gives a faithful picture of the plant which is a native of British Central Africa, growing at a height of 6,000 to 7,000 feet on the hill sides. It was exhibited at recent meetings of the Royal Horticultural Society by Messrs. Sander & Co., and by Messrs. J. Veitch & Sons. It was first flowered at Kew in 1898, and described by Mr. Baker in the *Botanical Magazine*, September 1, 1899, tab. 7672; see also *Gardeners' Chronicle*, February 5, 1898, and December 22, p. 466, 1900; *Flora of Tropical Africa*, vol. v., part iii., p. 440 (1900).

We were informed by Messrs. Veitch's foreman that the larger plants shown on Tuesday last had been in bloom for a period of six weeks, and it appeared probable that they would continue in bloom for another month. As fast as the spent flowers drop, others succeed them on the thyrses.

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT CASTLE HILL.

THE collection of George C. Raphael, Esq., at Englefield Green, has made marked progress under the care of his present gardener, Mr. H. Brown, and the plants are now in very satisfactory condition. The greater part of the present show of Orchids consists of a very fine strain of *Cypripedium* \times *Leeanum*, raised at Castle Hill, and which now fill one side of a house with sturdy plants well furnished with bloom, the flowers in the aggregate being about 300. The batch is interesting as showing the great variety to be obtained from crossing the same species. Fine varieties of *C. insigne* and *C. Spicerianum* were used as parents, but the difference in the resultant seedlings was scarcely expected. Taking the two extremes, the darker in colour with red-brown tinge over the petals and lip, and large pure white dorsal sepal with rose-purple blotching, is an improvement on the variety known as *Masereelianum*; while the lightest form is nearly as pale as *C. insigne* *Sanderianum*, but with a greener hue. These two extremes are linked by other forms varying in degree, and the larger flowers are similar to *C. Leeanum giganteum*.

In the same house are several good *C. x nitens*, raised at Castle Hill, but they are not nearly so floriferous as the *C. Leeanum*; also the fine form of *C. x radiosum* (*Harrisianum superbum* \times *Spicerianum*), raised here.

Other *Cypripedium*s in flower are *C. x Arthurianum*, which is said to have been in bloom since August; *C. x Bryan*, *C. x euryandrum*, *C. Argus*, *C. x Dauthieri marmoratum*, *C. x Lathamianum*, and *C. x Harrisianum*, varieties of *C. insigne*, and some others, including a very showy hybrid known as *C. x Titanes*, and reputed to be between *C. x Harrisianum* and *C. callosum*, though it is

difficult to understand how the fine white and dark rose upper sepal, and the shiny dark coloured lip and petals could result from such a cross; for the flower seems to indicate *C. x ceanthum superbum* on the one side.

Aerides and *Saccolabiums* thrive well, and in the range occupied in part by them are three plants in flower of the pure white *Saccolabium Harrisonianum*, a very rare occurrence at any period of Orchid history, and especially now that the *Saccolabiums* are seldom seen; also a fine variety of *S. bellinum*, a few other *Saccolabiums*, *Angræcums*, and *Phalaenopsis Schilleriana* with magnificent foliage and large branched spike.

In the *Odontoglossum* and *Masdevallia*-house the plants are in splendid condition, and sending up stout spikes freely. A singular instance of floriferousness is afforded by a good specimen of *Odontoglossum Pescatorei*, which some time ago produced a fine branched inflorescence from its leading bulb. That spike passed out of bloom, and the same bulb from the other side sent up another stout spike at once, which has now developed into a good spike, with several branches bearing large buds. In bloom were a few splendid white forms of *Odontoglossum crispum*, one of them a very large and finely shaped flower. Just about to expand was a flower of a very promising spotted variety; and bright colour is afforded by *Sophranitis*, the yellow *Masdevallia x Hinckiana*, &c.

The *Cattleya* and *Laelia*-house has a show of *Laelia anceps*, both white and coloured forms, together with *Cattleya Trianae*, *C. T. alba*, with several spikes, *C. Percivaliana*, &c.

In the houses devoted to decorative plants a large number of the handsome *Carnation* Mrs. Leopold Rothschild, a fine batch of *Poinsettias*, *Begonia Gloire de Lorraine*, *Cinerarias*, and other florists' flowers made an effective show.

CROCUS MARATHONISIUS.

DR. MASTERS has kindly sent me the specimen of this *Crocus* forwarded by Herr M. Leichtlin, and it is, as he states, identical with that described by me as *niveus* (*Gardeners' Chronicle*, 1900, p. 335); and upon referring to Prof. Von Heldreich's diagnosis of this plant in the *Atti del Congresso Congress* for 1874, I found the anthers described as yellow, but the description of the corm tunic as "thin subcoriaceous brown striped," made me desire an inspection of some of his herbarium specimens, to see, if possible, what led Maw to consider it a variety only of *Boryi*, and also to figure the anthers as white.

I have examined Maw's own specimens, now in the Natural History Museum at South Kensington, and those at Kew, and I am of opinion that Prof. Von Heldreich has sent out two plants under the name of *C. Marathonisius*. The first being the plant brought (as stated in a note attached to a specimen at Kew) in 1853 from *Marathonisi* (Gytheion) in Laconia "par mon ami Cadet de Fontenay, et depuis cultivé dans notre Jardin Botanique." Of this there are at Kew three sets in Heldreich's *Exsiccata*, prepared in 1857, and numbered 2806, containing several specimens all from *Marathonisi*; and at South Kensington are two specimens labelled "E Laconia (*Marathonisi*) collatus in horto Botanico Athenæum cultus, Novemb., 1877," also in Heldreich's *Exsiccata*. These four sets show the corm tunic to be of membranous tissue mixed with parallel fibres, the stigmata in no case overtopping the anthers, which appear to have been white in the better-preserved specimens; the proper spathes decidedly scarious. The presence of a basal spathe I could not ascertain, as the specimens are not prepared so as to show it.

Also among Maw's specimens are two in dissection labelled by him, "Received from Athens Bot. Gard., p. Mr. Heldreich, Nov. 23, 1878." In these the anthers are distinctly white.

Then at Kew is a set of specimens labelled:—

"No. 1485. De Heldreich, *Herb. Grec. Normale*: *Crocus marathonisius*, Heldr. *Atti Congr. Firenze*, 1874; *C. Boryi* forma major, see Maw & Boiss., *Fl. Or.*, v. 110. Mt. Taygetus in regione inferiori prope pagum Gaitzers. Legit am H. Zahn. Nov., 1897."

These have reticulated corm tunics, foliaceous proper spathes, stigmata variable as to compound division, but in each case overtopping the yellow anthers, and in all points, so far as I can see, identical with my *niveus*.

Of these six sets of specimens, the first five appear to be only a robust form of *Boryi*, and as Maw says, only differing from it by their shorter stigmata.

It seems to me that Maw can never have seen the plant represented by the sixth set, for the following reasons:—

1. His herbarium does not contain a specimen.
2. He reckons *Marathonisius*, Heldr., as a variety of *Boryi*, which species he classes among the section *nudiflori parallelo-fibrosi* (i.e., with no basal spathe, and tunic not reticulated).
3. He figures its anthers, *Pl.* 47b, fig. 4D, as white, and equal in height with the stigmata; and in a M.S. note to a specimen in the Kew Herbarium, says, "distinguished from *Boryi* as a well marked var. by its short stigmas never exceeding anthers, which Heldreich says is a constant character."

I further think Maw cannot have seen the diagnosis in the *Florence Atti*, for he gives an erroneous reference in the *Monograph*, viz., *Pl. Nov. Hellen. in Nuov. Giorn. Bot. Ital.*, 1875, vol. vii., num. 4, p. 11, which should read *Nuov. Giorn. Bot. Ital.*, ix., pp. 166 and 167; and then is only a mention of the Congress, and the reference, should be to the *Atti del Congresso Internazionale Botanico tenuto in Firenze, 1874* (Firenze, 1876), p. 235. It will perhaps be useful to give it in full.*

I do not see what is meant by "scapo multifloro." Maw says in the *Monograph*, p. 9:—"The scape is never branching, and never carries more than one flower;" and but for the words "antherisque luteis," I can find mention of no character that is of sufficient value to separate it from *C. Boryi*, that of greater size being thus dealt with by Boissier, *Flora Orientalis*, vol. v., p. 110, under *C. Boryi*:—"C. *Marathonisius*, Heldr., forma major totius latioribus, floris limbo interdum sesquipollicari, stigmatibus brevioribus."

I should greatly like to see living specimens of the plant with subcoriaceous corm tunic and short stigmata from *Marathonisi*, in order to settle the presence or absence of a basal spathe, and the colour of the anthers. Is it in cultivation, and can anyone help me?

As in his diagnosis Professor Heldreich quotes the *exsicc.* number 2806, this earlier-distributed form is clearly included; but the name *Marathonisius* must go to a plant with yellow anthers, and so to that from Mt. Taygetus, in spite of its reticulated corm tunic, basal spathe, and foliaceous proper spathes, and so for the present we seem to have a variety of *Boryi*, and this species sharing a name (except that Maw spells the termination with an "e"), and we get—

C. BORYI, GAY.

B. var. Marathonisius, G. Maw, *Synops. Genus Crocus* in *Gard. Chron.*, vol. xvi., p. 559, 1881.

C. Marathonisius, Heldr., *exsicc.* 2806! and in *Atti Congr. Int. Bot. Firenze*, 1874, p. 235, pro parte.

C. Marathonisius, Heldr., in *Atti Congr. Int. Bot. Firenze*, 1874, p. 235, pro parte (quoad pl. Tayget., Heldr., *exsicc.* 1485, non *exsicc.* 2806).

C. niveus, Bowles, in *Gard. Chron.*, vol. xxviii., p. 335, 1900.

E. Augustus Bowles.

* "*Crocus Marathonisius*, Heldr. *Pl. Ers.*, No. 2806, Ann 1852, seq. (Sect. *Autumnales*).—*C. tunicis radicalibus tenuibus subcoriaceis fuscis striatis inferne in lacinias parallelas latas solutis apice non productis, scapo 3-4 floro elongato crasso, vaginis 3-4 amplius, inaequalibus, foliis elongatis glabris supra 3-nerviis tenuiter, 3-5 sulcatis subtus linea alba, percurvis synanthiis flores superantibus, spatha diphylla membranacea longe exserta acuminata tubo breviori, tubo perigonii limbo duplo tripliore longiore, fauce nuda pulchre aurantiaca, lacinias oblongis v. oblongo-lanceolatis albis exsiccatione ochroleucis, filamentis antherisque luteis, stylo aurantiaco staminibus aequante v. parum superante trifido rariis in lacinias lineares apice vix incrassatas profunde multifido.*

Prope Gytheion (*Marathonisi*), hody Laconia, Nov. 1850 detexit am. Cadet de Fontenay. Ibidem copiose in collibus maritimis et in submontosis M. Taygeti meridionalis et occidentalis crescentem autumno 1872-73, legit Elias Psarides Museo Atheniensi adjunctus. Habui etiam ex ins Leucadia a cl. Mazzari missum.

Planta robusta florifera, 6-8 pollicaris, folia lineam circiter lata numerosa 5-6 elongata, limbus sesquipollicaris.

Affinis *C. Boryi*, Gay, sed bene distincta statura maxima scapo multifido, foliis elongatis numerosis et coloratione florum.

C. ochroleucus, Boiss. et Guill. (Diagn. Ser. II., 4, p. 93) statura et colore florum cum nostro magis congruit sed styli ramis apice dilatatis nec multifidis diversissimus."

MAKING AN ASPARAGUS BED.

As an Asparagus bed has to remain as it is made for a number of years, and as the amount of the crop in after years depends so much upon the manner in which it is made, too much care and labour can scarcely be bestowed upon the preparation of it where the crop is set much store by, either for family or for market purposes.

applied, especially to the lower soil, at the rate of a pound to 2 square yards, and well incorporated with it. Nitrogen can always be brought to the lower soil, as it is so easily soluble, but with phosphate, in which the soil is always tending to become exhausted, especially with such a crop as Asparagus, the subsoil is not so easily enriched. Kainit, dug in with the manure, is also useful, as it affords a supply of potash for some years.

obtained from a place near at hand, and directions given that the roots are taken up carefully, so as not to break the fibres off the roots more than necessary, and also that the roots are not allowed to get dry. If one has seedling plants on an old bed, it is best to use them, as they can be taken up with balls of earth and planted immediately. It is advisable to make trenches a foot apart, and put the plants into them a foot apart, the roots being spread out evenly along the bottom of the trench, with the crowns about 2 inches below what will be the level of the surface of the bed. When the trenches are filled up and raked over smoothly, the bed should not be trodden on afterwards, as Asparagus resents caked soil, which shuts off the air from the roots. It is a temptation to use three-year-old plants, as they give a return at once, but it is more satisfactory in the long run to use two-year-old plants, as they do not suffer so much from the moving.

FROM SEED.

The other system, which has the merit of avoiding damage by transplanting, and the demerit of requiring three years to get the bed into bearing, is to sow seed in March on a bed prepared as described above, in rows 1 foot apart, and to thin out the seedlings to 2 or 3 inches apart as soon as they are big enough to handle. When they die down in November, a mulching of manure will be useful for keeping out a little frost, as well as for feeding the plants. In the following March, the plants should be thinned out to a foot apart, those taken out being used, if necessary, for planting another bed. Four-year-old plants, under this system, undoubtedly have a more vigorous growth than under the other system, where they are transplanted the second or third year. The beds, especially when the plants are small, should be kept thoroughly weeded, liquid-manure being very helpful in dry weather, as well as a monthly sprinkling of salt.

In both systems of making Asparagus-beds, in moderate-sized gardens the beds should be from 4 to 4½ feet wide, with 3-foot alleys in between, so as to have four rows on each bed. Sometimes, when there is plenty of space, the rows are planted 4 feet apart, and then light crops, such as Lettuce, Spinach, and Turnips, grown in between. This gives the opportunity of cultivating the soil in between the rows, though not, of course, deeply, but enough to enrich and aerate it, and induce a vigorous growth. It takes up a deal of space, but probably pays where space is no object. *Alger Petts.*

CYTISUS PRÆCOX ×.

THERE are few more beautiful shrubs than this. Our illustration (fig. 19) was obligingly furnished by Mr. Fitzherbert, and shows a plant growing in the gardens of G. Soltau Symons, Esq., at Chaddlewood, Plympton, Devon. *C. præcox* was derived from a bed of seedlings in Wheeler's Nursery at Warminster, and is supposed to have originated as a cross between *C. purgans* and *C. albus*, as narrated in the *Gardeners' Chronicle*, May 22, 1897, p. 340. The flowers are of a creamy-white colour, and, as our illustration shows, produced in profusion.

MARKET GARDENING.

(Concluded from p. 19.)

PLANT AND SOW AT THE PROPER SEASON. — That few disasters overtake, and but little grumbling is heard from those who maintain an efficient working staff all the year round is simply traceable to the fact that all their cultural operations are performed thoroughly and at the proper time. Delay, and not our climate, is responsible for the bulk of the rubbishy produce so often displayed in our markets for sale, the natural sequence of a paucity of labour. Certainly a close observation of climatic conditions is highly necessary on the part of those who hope for success in the production of high-class fruit and vegetables, but this



FIG. 19.—CYTISUS PRÆCOX, GROWING IN THE GARDENS OF G. S. SOLTAU SYMONS, ESQ., CHADDEWOOD, DEVON.

THE BED.

The ideal soil for Asparagus, as for so many other things, is a deep, rich, sandy soil, but it will do well on most soils if a proper preparation be made for it. Bearing in mind that after the bed has been planted there is no chance of incorporating any manure with the soil more than 2 or 3 inches below the surface, it is necessary at the outset to enrich the soil to a depth of 2 feet at least, and, still better, 3 feet. This should be done in the winter as early as possible, plenty of manure being incorporated with the soil, especially with the second and third spits. Even more important than the animal manure is basic slag, which should be

The soil having been prepared in this way in the winter, it should be left untouched until it is nice and friable some time in March, when it should be dug over, and some well-rotted manure and salt mixed with it, and also some superphosphate of lime, the latter at the rate of 5 lb. to the 40 square yards. This latter, however, is not really necessary if the basic slag was well mixed with the surface soil in the winter as well as with the sub-soil. Having given the bed a few days to dry and settle, the planting can then be done.

PLANTING.

Two systems can be adopted: the usual way is to buy plants, and when this is done, they should be

observation will minimise, in a great measure, the difficulties in connection with our fickle climate and brief summers, and go far to prevent the oft-repeated mistake of sowing or planting at any save the proper season.

As a typical instance of the dangers of delay in matters pertaining to market gardening, how often does one see a plantation of Tomatos made in the open with plants so young that the ripening of the crop they produce begins simultaneously with the early autumn frosts, which effectually blight any hopes of profit the grower may have entertained, and cause him to declare to the world that it is useless to attempt the outdoor profitable cultivation of the Tomato in England with any chance of success; whereas, if he had but taken the precaution of having, when the planting season arrived, well-prepared sturdy plants of proper age, the chances would have been in favour of a good crop of matured fruit before the advent of the cold autumn rains. How often, too, has the remark been heard from a market-gardener, accompanied by a shake of the head, whilst viewing a field of Broccoli or other such produce at the approach of autumn, "Ah! there is not enough bone in them," discovering, when too late, that the time for making "bone" had for that year fled, and that the fault lay with himself in not making his sowings and plantings earlier.

SMALL HOLDINGS.

I have nothing to say against large holdings, provided they are managed in a scientific and rational manner, with the view of making them yield a maximum of first-class produce; but, as has been pointed out, it is not possible to prevent anyone with capital, but wanting in knowledge, from embarking upon the business of a market-gardener, and systematically carrying out his own stiff-necked plan of operations. It is to be feared, however, that if some other plan be not quickly adopted for the supply of our markets, they will continue to be served to a great extent by this class of grower with inferior produce, which will increase the foreigner's grip on an English industry.

I suppose it must be admitted that all legislative Acts already passed in relation to small holdings are to a very great extent failures, and yet I do not see how we are to successfully compete with the foreigner and stave off his goods, which can be better produced here in England, unless we in some way induce our local authorities to establish and encourage a system of small holdings for our rural population, with the object of growing for our markets fruit, flowers, and vegetables of a superior kind to those now so greatly in evidence. If all be correct that has been recently reported, it would appear that the County Council of Surrey some seven years ago started an experiment at Banstead under the name of the "Continuation School Gardens," by which youths could hold and cultivate land, and, under the Council, were specially instructed in the best methods of land culture. Since then, it is said, the value of the produce has increased from £42 per acre to £103 2s., and in some instances it has been more; the expenditure, including labour, never having been above £40 per acre. It is further stated that there are now some 270 lads employed as above. It will be seen that the above figures in relation to expenditure and returns are somewhat startling, and it would be deeply interesting to know all the details of the above experiment, while in the meantime we may justly exclaim, "Well done, Surrey!"

Such an experiment is undoubtedly a step in the right direction, and if these youthful land cultivators can only be induced to send nothing to market save what is of the choicest description, a movement will be begun which other counties would do well to copy, the ultimate effects of which on our market-gardening trade would be far-reaching and beneficial. Not only would the English trade in horticultural produce be more in the hands of those who are best entitled to it, but our rural population would be vastly increased—a state of things greatly to be desired—and the congestion of our

great centres of population be relieved to some extent.

That allotment-holders of the proper type can, and do, obtain from their patches of land produce as good, and frequently better, than that grown by our more pretentious market-gardeners goes without saying, and this fact ought not to be lost sight of by any rural council in Great Britain, but should rather be a stimulus in the encouragement held out to would-be small holders of land to enter on a scheme upon the best lines known up to the present time.

It augurs well, I imagine, for the future of any such scheme to read such statements as these from a recent speech by the newly-appointed Minister of Agriculture, Mr. Hanbury:—"It is not for me now to give an opinion of what the causes of the depopulation of the country districts are, but I venture to think the education given in our country villages has not been the kind of education which would best fit children for rural life."

Again: "Every penny I possess came, not from origin investments, but from my own properties, either its surface or its minerals which I have been happy enough to discover. My interest in the land of the country is very close, and I will yield to none in my concern for the development of special branches of rural industry." We have it also on the authority of the Hon. Mr. Chaplin, from statistics recently obtained from the Board of Agriculture by him, that last year there were imported into England enormous quantities of butter, cheese, eggs, poultry, and margarine, "all of which we could have produced equally well at home."

Not "equally well," Mr. Chaplin, but better. To remedy all this I am convinced that we must fall back on and utilise the latent skill of our rural population, and encourage by all means in our power the allotment system of cultivation, which is carried out with such wonderful and beneficial results in other countries. Surely it must be wiser for us to use our best means to promote this class of cultivator as a permanent power in holding a trade that is being brought to ruin through the selfish acts of the moneyed speculator and the ignorant dabbler in a business he knows nothing about. *J. Lowrie.*

THE WEEK'S WORK.

THE FLOWER GARDEN.

By T. H. SLADE, Gardener to Lord POLTMOORE, Poltmore Park, Exeter.

Planting.—If the planting of shrubs and trees be contemplated, the spots each will occupy should be indicated with peeled rods, and views taken of them from different points. Allow sufficient space for the full development of each plant, and give thought as to what the effects may be some years hence. Planting may be performed from now till the end of March; Conifers with plenty of ball, and Hollies of all kinds, may be planted from this date till May or June, if proper attention in affording water at the root and overhead syringing can be paid them in the spring and early summer months.

Bedding Plants.—Preparations should be made for Cannas, and for soon beginning the propagation of tender plants. Much water should not be afforded Pelargoniums unless they are placed in an intermediate or forcing-house. Sow seeds of Grevilleas, Cannas, Cordyline indivisa, having first soaked the seeds for a day in water. The seeds of the tuberous-rooted Begonia may be sown in pans of finely-sifted, light soil, which should be afforded water, and stood aside to drain for an hour or two before scattering the seed over the levelled and smooth soil. Place the pans in a dark place, or cover with a tile or slate. A temperature of 60° is suitable. The pans may need no more water until germination has taken place.

The Summer Beddings.—Assuming that the designs for next season have been decided upon, it will be necessary to carefully examine the plants already in stock, with a view to propagating those which are deficient. Cuttings should be inserted in pans in light, sandy soil; and if the stock plants of Alternantheras, Coleus, Mesembryanthemums, &c., have not made sufficiently long

growths, suitable for cuttings, place them in a temperature of 60° on a shelf near the glass. The cuttings, when they have been inserted in the soil, may be placed in the same temperature, well watered in, and occasionally sprinkled overhead with water until rooted. A moist atmosphere will suit them, but if they are confined in a case they will be liable to damp off. Where shrubby Calceolarias do not succeed, substitute Tropæolum Mrs. Clibran, a compact plant growing about 9 inches in height, suitable for carpeting or as an edging for large beds; it may be propagated by cuttings, and grown in a temperature of 55°. Kœnigia maritima makes a good plant for edging or as a ground-work for other plants, and may be increased in the same way as Lobelia, to which it is far superior as a bedding plant. The variegated Anthericum, or Phalangium, as it is often called, is very useful as a small dot plant interspersed with tall species. If the plants be divided up, placed in 5-inch pots, and afforded a little heat, they will become of a useful size by the month of May. Pot up Pelargoniums, and afford them a warm house for a time. Remove the tops from the plants if more cuttings are required. Any of the Ivy-leaf section wanted as dot plants should be shifted on into larger pots, placing a stake to the longest shoot, and pinching in the side shoots to induce a pyramidal habit of growth. Fuchsias and Plumbago capensis (pyramid or standard) may be pruned, and allowed to commence growth slowly.

Cannas.—Stock plants should be divided and potted up, allowing two or three crowns to each plant. Afford them liberal treatment when growing, but do not hurry them. Two of the best varieties for bedding are Cheshunt Yellow and Florence Vaughan, a spotted variety. Those of dwarf growth are Mr. J. Bailey, crimson flower, and massive spike; Mr. William Marshall, yellow spotted; and William Tolfts, of a fine salmon colour.

General Work.—Take advantage of favourable weather to proceed with any planting that has to be done, as this kind of work may become impossible during February and March. Afford free ventilation during mild weather to hardy or half-hardy bedding plants in frames. A sowing of Sweet Peas may now be made outside, when the weather is favourable.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bicton, East Budleigh, Devonshire.

Peas.—A sowing should now be made on a south border or other warm spot, a large draw-hoe being used in drawing the drills, which should be about 3 ins. deep and 6 ins. wide, so that the seeds are not be crowded together. In order to deter mice taking the seeds, moisten them with petroleum, and roll in red-lead powder. Good first crop varieties are May Queen, Exonian, and Early Marrow. Allow a space of 4 feet between the rows of these varieties; but if such dwarf Peas as Chelsea Gem or English Wonder, 2½ feet apart will suffice. Some gardeners prefer to sow in small pots, or in boxes fitted with a moveable bottom. The box is better, as but little check is given to growth in lifting and planting, which in heavy land is very desirable, as March sometimes is on us ere the ground can be got into good order. Seeds started in boxes, &c., should be placed in gentle heat until germination takes place, then be removed to cooler quarters near the glass, and out of the reach of mice.

Broad Beans.—The foregoing remarks apply likewise to this crop, except that the seed should be sown a little deeper, and 3 inches asunder in double rows; and the drills at 3 feet apart. Early Longpod is a profitable variety for first sowings.

Cauliflowers.—The greater number of these plants will have been consumed, but should any of them remain, bend or tie the leaves over the heads, and place them in a light shed or unused cold-pit, affording air freely when there is no frost. A sowing should be made in pans or boxes of an approved early variety, filled with light soil, and be placed in a forcing house just started. Apply water to the soil before sowing, and then but seldom till germination has occurred, and when in the second leaf remove to a cooler place; keep quite near to the glass, and avoid draughts. If damping off or mildew appears, slightly sprinkle with flowers-of-sulphur and wood-ashes.

Carrots.—A sowing may be made in a frame on a mild hot-bed towards the end of the month, employing a light sandy soil of the depth of 6 to 8 inches. Sow the seeds in drills drawn 4 to 6 in.

apart, after mixing them with sand, into which it should be well rubbed with the hands. Slugs are sure to appear, and must be kept in check by dustings of lime. The varieties Parisian Forcing and Early Gem are suitable.

Salads.—Make a sowing of Wood's Early Frame on a mild hot-bed, and as soon as the seed sprouts, afford air on every favourable occasion, for Radishes that get drawn always fail to form an edible root. Close the frames early with a slight dewing over. Lettuce seeds should be treated similarly to Cauliflower. The plants will be planted on a warm border later on, and must be properly hardened off before that is done. The seeds may also be sown moderately thickly in boxes, and the plants cut down in a young state as material for making salads. Chicory roots denuded of their old leaves by cutting them off an inch above the crown of the root should be placed in numbers equal to the demand in a darkened Mushroom-house, &c.

THE HARDY FRUIT GARDEN.

By C. HERRIN.

Pruning Apricots.—The change to somewhat colder weather will come as a welcome check to this rather precocious tree, which, had the mildness continued, would have been unusually early in coming into bloom. The pruning of the Apricot should not be longer delayed; the more general method of pruning and training the Apricot is on the spur and young wood system, training in the young shoots where the space is sufficient, and allowing spurs to grow on the older branches, the latter sometimes setting their blossoms when those on the young and stronger growths fail. If summer or early autumn pruning was carried out, there will not be much cutting-back to do at this date, when the wounds do not heal so readily, and therefore the less of winter pruning is done, the fewer are the risks of gumming. Foreright shoots and those coming from the spurs that were shortened to 2 or 3 inches in the summer will require no further attention, but all others that are longer should be cut back to that length. Trees with elongated fruit-spurs may be treated in the manner recommended for Pears, that is, to cut away a few annually nearly close to the branch, where a young growth from a dormant bud will probably start into growth. Sometimes the saw must be used, and the rough surface of the saw-cuts made smooth with a knife. Strong leading growths should be slightly shortened if there be space for further development, and weak ones should be cut back to the first good bud above the old wood. Although it is now rather late in the season for lifting and replanting, or root-pruning, this sort of treatment may still be carried out on young trees that have made very strong shoots, which are more liable to cankering or gumming on the slightest injury than are weaker ones. In doing these operations, always dig out a trench round the roots with a radius of 3 to 4 feet from the stem, and carry the excavation down to the depth required, shortening the thickest roots, and cutting away or lifting to the horizontal those that trend downwards. An Apricot border should not be rich, and if the soil be heavy, brick and old mortar-rubble should be incorporated with it before replanting, but adding these materials in lesser quantities where the soil is of a lighter texture. Lay the roots out horizontally, treading the soil firmly about them, and where root-pruning only has been performed, the soil should be well rammed underneath the ball. Apricot trees being so subject to the loss of branches, it is advisable to keep a few young trees growing against the warmer walls as a reserve wherewith to fill up gaps.

Training.—Do not allow a less space than from 4 to 6 inches between the shoots and branches; and begin by laying in the main branches, tying these with tarred string. All nails touching the branches should be drawn or broken off, and a shred should be placed between the shoots and the string. The smaller shoots should be fastened simply with shreds and nails, or in the case of a wired wall, with bast or raffia, affording in each case space for increase of growth.

Various.—Should frosty weather or snow occur, the fruit-bushes must be netted, or the gun used as a defence against bullfinches, tomits, and sparrows. Lime and soot, if it be scattered over the bushes while damp, or a syringing with petroleum emulsion afforded, may act as deterrents, but both are apt to get ineffective after rain.

FRUITS UNDER GLASS.

By MALCOLM MCINTYRE, Gardener to Sir CHAS. TENNANT, The Glen, Innerleithen, Peeblesshire.

Melons.—Those gardeners who have the convenience of a Melon-house may begin operations forthwith, in the first place thoroughly cleansing the walls and preparing the beds, so that there will be no delay when the young plants are ready for turning out. The seeds should be sown without loss of time, putting one good plump seed in pots of 3 inches in diameter, making the soil firm beneath the seed and much less so above it. These pots should be plunged in a bottom-heat of 80°. See that aphids, crickets, and cockroaches do not molest the young plants. Keep the leaves of the plants within a few inches of the glass, and afford as much light as the plants will bear without flagging, and keep the soil moderately moist, and spray the foliage lightly on bright afternoons. This being the commencement of a long season of Melons and Cucumbers, it will save a great deal of time if the plants are raised in an ordinary hot-bed out-of-doors, or in a corner at the warmest end of the propagating-pit. A bed consisting of a few cubic feet of tan or tree-leaves will turn out a constant supply of plants. The best kind of soil in which to sow the seed is a moderately light loam, which being adhesive enough to make a compact ball will support the plants all through. Before the seeds are sown, the soil should be warmed and made fairly moist, so that no water will be needed till the seedlings get the first true leaves. The plants should be repotted into pots one size larger as soon as the tips of the roots touch the sides of the pots, unless the bed is in a fit condition to be planted. I would advise pots in preference to a bed of soil for early Melons, fruiting occurring rather earlier in the former than in the latter, the heat being brought up to the rims of the pots, and the beds easily turned and refreshed with new fermenting materials; moreover, the conditions of growth and of the soil are more under control. The compost used in a pot or bed should consist of a heavy loam, with a sprinkling of fresh soot and bone-meal, and one-tenth part of lime-rubbish. These materials should be kept dry, and in readiness. The fruiting-pots should not be less than from 12 to 14 inches in diameter. The pots should be two-thirds filled and carefully rammed, so as to form a firm base for small cones of compost, which should be raised quite level with the rims of the pots. Melons, unlike Cucumbers, will not thrive if earthed up round the stems. When turning the young plants out, the ball having been previously moistened, place them on the summit of the cones, when a little warm compost should be put around them, and a small stake employed as a support, to which they must be fastened till the bine reaches the trellis.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. I. MEASURES, Esq., Cambridge Lodge, Flodden Road, Camberwell.

Phalenopsis.—The various species and crosses are generally regarded as unsatisfactory plants under cultivation, but, like most other Orchids that are considered difficult to grow, they do well when suitable positions are found for them. There is a tendency among gentlemen's gardeners to confine their attention to some one or two particular classes, and to discard many of the more useful and interesting kinds; Phalenopsis in particular being one of the discarded. The chief aim in a private establishment, in my opinion, should be a long succession of flowers, and the maintenance of the houses in as bright a state as possible, especially during the autumn and winter. To obtain these desirable results, it becomes necessary for the gardener to give consideration to the species and the hybrids, and the season at which they produce their flowers, and if this be done, the winter-flowering section of Phalenopsis will demand more attention than that generally given them. It is often said that the Phalenopsis should be grown in a house by themselves. If such were the case, how can we account for the fact of plants being met with which have been always grown under ordinary stove treatment, with no pretence on the part of the gardener of being a specialist in Orchids. The fact of suitable conditions being necessary for the well-being of the plants show what is required. It frequently occurs that a certain part of, or position in a glasshouse may not suit a particular species, and by removing the plants to another, one we often bring about desirable results. This fact of

change in position was never more fully illustrated than in the case of Phalenopsis here. For some years after I took charge of this collection, the plants had been arranged on the back stage of the house, elevated on teak cylinders placed upon inverted flower-pots. I was able to retain enough life in them as to make small leaves, but as fast as these were made, the older leaves decayed, either from the "spot" disease, or from what seemed to be natural decay, the plants making practically no progress. It was decided to remove them to another house, which was done, with the exception of two plants; and these two plants being destitute of leaves, although the crowns and roots were alive, were too unsightly to be placed among the others, and were hung near to the roof-glass; and I did not expect that they would grow again. To my surprise, a few weeks later these plants commenced to push up a leaf, quickly completing the first and producing another; side breaks also appeared, and as the plants made good progress, and were doing better than the bulk of the plants, it was decided to fix up carriers to the roof and suspend the whole of them under similar conditions. This has proved in every way satisfactory, and many of the plants having been purchased from old-established collections at the times of their dispersal, they afford another bit of evidence of the longevity of Orchids, many of them having been in cultivation, here, for the last fifteen years. One of the principal causes of the well-being of Orchids is the timely removal of the flower-spikes of these after the opening of the flowers. Nothing distresses these plants more, than for them to carry a quantity of bloom for a long period of time, although the ill-effects may not appear immediately. At this season the plants, whilst the flower-spikes are in course of development, should be kept in a moist condition at the roots, and until the time they are removed, when drier conditions at the root may prevail, but with very much humidity in the air of the house at all times in ordinary weather. When the outside temperature is low, the plants will not be nearly so liable to injury if the humidity of the air of the house be reduced accordingly.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HUSSEY PACKE, Esq., J.P., Prestwold Hall, Loughborough.

Ferns.—The common condition of some species of Ferns at about this season, owing to the removal of fronds, is not very flourishing, and it is well to apply water with judgment for a few weeks, that is, what is only sufficient to maintain the flagging, of the existing fronds. Ferns that are rested in this manner throw up more young fronds and grow with greater vigour than when the opposite course is followed. As soon as the plants of *Adiantum cuneatum* are cut over, let them be placed in a pit having a temperature of 50°, and keep them therein till new growth has begun. The general repotting should be deferred till the beginning of next month, by which date growth will have become generally perceptible.

The Conservatory.—This structure being nearly always connected with the dwelling, should, at such time as the family is in residence, be maintained at its best in regard to the display of flowering and foliage plants, and order and cleanliness. Having regard to the short duration of the flowers of *Chrysanthemums*, zonal *Pelargoniums*, and *Salvia splendens*, a re-arrangement of the plants will now be called for. The following are plants that may be made use of: *Azalea amœna*, *A. indica*, *Deutsche Perle*, *A. i. alba*, *A. mollis*, *A. rustica*, &c.; *Syringa persica*, *S. vulgaris*, and vars.; *Acacia Drummondii*, *A. longifolia*, *A. armata*, and *Richardias*. If any of these plants were put into the forcing-house some time ago, together with *Primulas* and *Cinerarias*, they will now be available after proper hardening-off, for use in the show-house. Dutch bulbs, *Freesias*, *Narcissus obvallaris*, *N. Paper White*, and *N. Golden Spur*, *Begonia Gloire de Lorraine*, and the last of the Roman *Hyacinths*, will afford variety. In arranging the flowering-plants avoid too much inter-mixture with *Palms* and some other foliage-plants, these not associating well together, and it will be found on trial that grouping each by itself affords the more pleasing effects. *Begonias*, as they become shabby, should be partially cut back and placed in warmth of 50°, and kept rather dry at the root. Plants of *Epacris*, *Erica hyemalis*, and *E. gracilis*, should be cut back after flowering, and repotted as soon as growth recommences.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, JAN. 23 { Gardeners' Royal Benevolent Institution: Annual Meeting at "Simpson's," Strand, 3 P.M.

SALES.

MONDAY NEXT.—Hardy Border Plants, Fruit Trees, Roses, Tuberoses, Ferns, &c., at Protheroe & Morris' Rooms.

WEDNESDAY NEXT.—New American Fruits, Lilies in variety, Tuberoses, Spireas, Begonias and Gloxinias, Roses, Azaleas, Palms, &c., at Protheroe & Morris' Rooms.

FRIDAY NEXT.—Imported and Established Orchids, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—37°9'.

ACTUAL TEMPERATURES:—

LONDON.—January 16 (6 P.M.): Max. 40°; Min. 34°.

January 17.—Mild, dull.

PROVINCES.—January 16 (6 P.M.): Max. 51°, Cornwall; Min., 40°, North-east Scotland.

TILL within the last few years the flowers of the Sugar-cane were unknown. The very numerous varieties cultivated must, therefore, have originated from bud-variations. Great as was the number of these varieties, and varied as their constituents must have been as to quantities, if not as to qualities, the range of variation was not great enough to be of much importance from a commercial point of view. Some varieties, doubtless, were better adapted for particular soils—some contained more, some less than the average amount of sugar; but these differences were not sufficient to materially influence the market price of the product. With the discovery of the flowers and of seedling variations the horizon has been extended. The application of the knowledge so gained is, as botanists thought would be the case, already leading to useful results.

The results obtained by Prof. D'ALBUQUERQUE and Mr. BOVELL, the chief of the botanic station in Barbados, as detailed in a report to which we have already called attention, show that the yield can be increased by as much as forty per cent. Agriculturists and physiologists will remember the large increase in the quantity of sugar obtained from the Beetroot by the processes of selection on the one hand and of elimination on the other, carried out by the DE VILMORINS, father and son. The benefits that have accrued to France from the labours of these men are too great to be readily calculated.

"But Beet and cane," as was pointed out in a recent number of the *Times*, "alike produce in natural conditions only just so much juice as is conducive to their physiological well-being. The art of cultivation consists in making each plant produce as much more than this physiological minimum as is consistent with the health and vigour of the plant, so that if the economic and physiological conditions could be so combined as to render the Beet a bag of saccharine matter, and the cane a tube of the same material, the process would have reached its limit. It is well known that this

process has very nearly reached its limit in the case of Beet, the saccharine productiveness of which has been very nearly doubled in recent times. But the corresponding process has hardly yet been entered upon in the case of cane, so that whatever results it may hereafter attain will give it not merely a relative and temporary advantage over Beet, but an absolute and permanent advantage. This is why the results obtained by Messrs. D'ALBUQUERQUE and BOVELL, in Barbados, are so hopeful and encouraging. Nor is it only in this direction that the prospect is distinctly improving. Since the establishment of the Imperial Department of Agriculture, exhaustive experiments have been instituted under its auspices in several of the islands, with a view to determining the exact effect of different kinds of manure applied under a variety of conditions in increasing the yield of the Sugar-cane. Results of experiments conducted in Antigua, St. Kitts, and Nevis, have already been published by the Department, and Dr. MORRIS, the able and energetic head of the Department, promises a similar report on the results obtained in 1900 from manurial experiments, and experiments with leguminous crops in Barbados. Further, if capital were only forthcoming for the purpose, it is certain that large economies in the manufacture of Sugar from the cane could be effected by the erection of central factories fully equipped with all modern appliances."

Botanical research has often been looked at by so-called practical men with indifference, if not with contempt. What practical man, of the type we have in view, would have considered that the discovery of the flowers of the Sugar-cane was a matter of any consequence to him? If he thought about the matter at all, he would probably have considered that the botanists were a harmless folk, given to indulgence in laborious trifling.

But now, with such facts as those just alluded to, and many more of a similar character, it is shown that the ruin of a great industry may be averted; and that the welfare of a considerable part of the world's area may depend upon such observations.

In these days a subdivision of labour is imperative; it is the business of the man of science to bring facts to the light, and to arrange them in orderly method, so that their mutual relations may be determined. It is the duty of the man of practice to avail himself of these facts and discoveries, and so far as may be, to utilise them for the benefit of humanity.

CORDYLIN INDIVISA (see Supplementary Illustration).—Our supplementary illustration shows a fine flowering plant of this species in the garden of Dr. RAMSAY at Torquay. Both this species and *C. australis* are hardy in the south-western counties and the Scilly Islands, from which localities we have frequently figured them. Sir JOSEPH HOOKER'S monograph on the New Zealand species of Cordylina appeared in our columns in 1860, p. 792.

MR. GEO. GORDON, V.M.H.—Many of our readers will share our sympathy with Mr. GORDON, the Editor of the *Gardeners' Magazine*, in the loss of his wife. Mrs. GORDON died early on January 11, after a very long and painful illness. Her remains were interred at Richmond Cemetery, on Monday last. Mr. GORDON suffered the loss of his eldest son, GEORGE, only six months or so ago.

MR. DOUGLAS.—Every horticulturist will sympathise with Mr. and Mrs. DOUGLAS in the loss of their second son in South Africa. He was, it appears, killed by a lightning flash on the 10th inst. at Stormberg. His elder brother has been all through the war, and was one of those shut up in Kimberley. Both brothers were in the Cape Mounted Police.

M. CHATIN.—We regret to announce the death of M. CHATIN, a Member of the Academy of Science and the Academy of Medicine, and formerly Director of the School of Pharmacy. M. CHATIN was, therefore, known not merely for his chemical researches, but for his studies in the comparative anatomy of flowering plants, in which direction he did much useful work. He had recently resided at Les-Essars-le-Roi, near Fontainebleau, where he continued his scientific work up to the last week of his life. M. CHATIN died on Monday, January 14, at the age of eighty-seven.

CLIANTHUS ON COLUTEA.—At a recent meeting of the Société Nationale d'Horticulture de France, M. MARC MICHELI, Château du Crest, Geneva, showed a *Clianthus Dampieri* grafted upon *Colutea arborescens*, and accompanied it with the following remarks:—"This interesting leguminous plant from New South Wales was introduced into European gardens fifty years ago. In spite of its beauty and distinctiveness it is still rare, as it is difficult and uncertain of cultivation. It is a valuable decorative plant, having the further advantage of remaining in flower several months. It is, therefore, interesting to learn that it can now easily be grown by grafting, immediately after germination, *C. Dampieri* on *Clianthus puniceus* or upon *Colutea arborescens*. The seed is sown in February, and as soon as the cotyledons are sufficiently expanded for the operation to be possible, the terminal bud of the stock is removed and replaced by that of *C. Dampieri*. The union is easily effected; flowering begins in June or July, and continues without interruption. No special care is needed, merely ordinary garden soil, plenty of air and light, moderate waterings, and no wetting of the leaves. This grafting has been performed for four years. M. MICHELI first saw it effected by M. FROEBEL, a nurseryman of Zurich, and M. MICHELI'S head-gardener, M. DELAPIERRE succeeded with three fourths of his subjects. During 1900 growth was rather less vigorous, and flowering less abundant, but simply as the result of an accident. Under this treatment *Clianthus* is likely to be largely grown."

WILD ONION.—This is a pest in many places. Spraying the soil with carbolic acid early in the year is said, in the *Journal of the Royal Agricultural Society*, to be effective by killing the plant, the land itself being uninjured.

TURNIP-DISEASE CAUSED BY BACTERIA.—The *Journal of Botany* for the present month contains a paper on a disease in Turnips, characterised by the destruction of the crown of leaves, and the formation of a cavity at the top of the "bulb." Mr. CARRUTHERS has also published a similar communication in the *Royal Agricultural Society's Journal*; and Prof. POTTER, of Durham, has laid before the Royal Society a paper on the same subject. The disease is attributed to the attacks of a bacterium.

CORRECTION.—We are requested by Mr. JAMES BRITTEN to insert the following correction:—"In the *Journal of Botany* for January, p. 48, following a paragraph on the *Flora of Tropical Africa*, it is stated that "the work remained in abeyance during thirty-one years, for the greater part of which—i.e., since 1872—it was in the hands of the present editor, who issued the first instalment of the continuation in 1896." The *Flora of Tropical Africa* did not come into Sir W. THISELTON-DYER'S hands until 1891, and the first part of the continuation was issued in 1897. I shall be glad if, pending the issue of the *Journal of Botany* for February, you will allow me to make this correction in your columns, and to apologise to Sir W. THISELTON-DYER for the error which I inadvertently committed. James Britten."

INSTITUTE OF FRANCE.—M. STRASSBURGER, of Bonn, has been elected Correspondent in the Botanical Section of the Académie des Sciences, in place of Sir JOSEPH HOOKER, who has been elected Foreign Associate.

COUNTY BOROUGH OF HANLEY HORTICULTURAL FÊTE.—From Mr. JOSEPH KENT, the Horticultural Secretary, we have received a copy of the schedule of prizes to be offered at this exhibition to be held in Hanley Park, on July 3 and 4. There are in all 107 classes, and the prizes in most of them are valuable ones. For a group of miscellaneous plants to be arranged upon a space not exceeding 300 square feet, the 1st prize will be £25, the 2nd £20, and others of £15 and £10. The two first prizes will be accompanied also by special prizes to the value of five guineas and two guineas respectively. £15, £10, and £5 are offered in a class for the best group of Orchids on a space of 100 square feet. Very liberal prizes are offered for groups of *Souvenir de la Malmaison* Carnations to cover a space of 100 square feet, also for a collection of twelve plants, six specimens to be in flower, and the remaining six of fine foliage species. There is a number of classes for Rose blooms, the most important of which will call for sixty blooms, distinct varieties. Class number 18, is described as the "New Century" class. It is designed for collections of British garden produce, to occupy spaces of 15 feet x 4 feet upon tables. Fruits, vegetables, plants, and flowers must be represented in quantities defined in the schedule. The 1st prize will consist of the sum of £12, and a silver cup value six guineas. Three other prizes of £8, £5, and £3, will each be accompanied with valuable special prizes. The produce will be arranged according to the taste of the exhibitor, and the judges will take into consideration "the quality of the whole produce, the harmonious blending and general arrangement for effect." In addition to the Roses already mentioned, there are many classes for miscellaneous cut flowers. The fruit and vegetable section will include many special classes in which prizes are offered by various seed firms, besides the Society's own classes. Hanley Park is only a short distance from Stoke-on-Trent railway station, which is in the centre of the Staffordshire potteries, and therefore of a vast population. Entries will close on July 1.

APPOINTMENT OF CITY GARDENER FOR EDINBURGH.—Mr. MCHATTIE is the successful candidate out of the 138 applicants or the above post, having been elected by a good majority of the Town Council on the 15th inst. The other applicants nominated by the councillors were Mr. ROBERT BELL, Barons Court, Newton Stewart, Co. Tyrone; Mr. THOMAS H. COOK, Gosford Gardens, Longniddry; and Mr. A. D. RICHARDSON, Royal Botanic Garden, Edinburgh. Mr. MCHATTIE, who is forty years of age, was head gardener at Oxenford Castle, Dalkeith, at Newbattle Abbey, and at Strathfieldsaye, Hampshire. Latterly he has been engaged in landscape work at Tynney Hall, the seat of Mr. LIONEL PHILLIPS.

PEAT FOR CLOTHING.—Finding it impossible to realise peat as fuel, as a substitute for coal, an inventor has turned his attention to making a heat retainer in the guise of blankets, carpets, curtains, &c.; and the design is stated to have been successfully accomplished. The raw material is taken from the bog, and so treated as to retain only the larger fibres, grasses, &c., which after being thoroughly washed, dried, and generally prepared for spinning and weaving, is woven into the materials above mentioned, also paper-hangings. The product is stated to be equal to wool, but it is suggested that only a sportsman on the moors may be found rigged out in articles of clothing taken originally from the proximity of the haunts of the grouse and deer.

"MY GARDEN DIARY."—Messrs. SUTTON & SONS, of Reading, have sent out this pretty little pamphlet for 1901, and it is likely to prove quite as acceptable as in former years. There are useful gardening "reminders" for each month, blank pages for memoranda, and dainty illustrations, as well as the annual information common to all calendars.

"HUSBANDRY, GARDENING, FORESTRY."—Messrs. W. WESLEY & SON, 28, Essex Street, Strand, send us their catalogue of second-hand books on these subjects, which is very interesting, and deserves the attention of all book-lovers.

BRIGHTON AND SUSSEX HORTICULTURAL SOCIETY.—We learn from the annual report that has reached us, that the committee has to deplore a serious decrease in the subscribers' and of hon. members' subscriptions. During the last and present year many deaths have occurred, and practically no new members have volunteered to take their place; and in order to carry out their present programme, the committee earnestly appeal to their subscribers to bring this matter before their friends. The receipts for the spring show were much better than usual; the summer show was normal, but the usually lucrative Chrysanthemum show produced practically no profit; many causes (principally the weather), contributing to the detriment of this show. The expenditure generally is less, and the committee are able to present a balance-sheet showing a profit on the year's working of £13 10s. 1d., and a balance in the hands of their bankers of £122 19s. 2d.

"MEALIES."—It appears from an American Exchange that large quantities of Maize are now indirectly used in the manufacture of smokeless powder. Spirit is distilled from the grain, and this spirit is used in the manufacture of the powder. Maize is already largely used in the manufacture of glucose, starch, gum, and in the production of a substitute for rubber.

"THE BRITISH WEATHER CHART."—Mr. JENKINS has issued for the fifteenth year in succession his chart of forecasts for the present year. According to Mr. JENKINS, we shall probably have a warm, dry summer, followed by a mild, stormy autumn and winter. The chart may be obtained from Mr. R. MORGAN, 65, Westow Street, Upper Norwood, S.E.

AGRICULTURAL EDUCATION IN GERMANY.—There are chairs of agriculture and agricultural institutes in, or connected with, no fewer than twelve universities: Breslau, Giessen, Göttingen, Halle, Kiel, Königsberg, Leipzig, Rostock, Jena, Bonn, Berlin, Munich. In addition there are schools of agriculture at Hohenheim, Weihestephana, and twenty others in various parts of the country. This does not include the primary schools, where the education given is of a more elementary character. The total number of agricultural educational establishments in Germany is 241, without including special schools of horticulture, dairying, and other industries connected with the cultivation of the land. Travelling teachers visit the remote districts to instruct the peasants, and show them the best methods of cultivation, &c. The establishments we have named are chiefly or wholly for instructional purposes. In addition there are seventy-four experiment stations in which original observation and research are the chief objects sought. Surely the words "made in Germany" acquire a deeper significance when considered in the light of the facts above-mentioned, and the more so when we remember that what applies to agriculture applies also in its degree to all branches of science and industry. In educational matters we are a long way behind our neighbours, and the sooner we realise the fact the better will it be for our commerce and industry.

PARIS.—We learn that the Société Nationale d'Horticulture de France have arranged to hold exhibitions during the current year on the dates below mentioned:—Annual Spring Show, May 29 to June 3; Chrysanthemum and Fruit Show, the first fortnight in November; Orchid Shows on February 28, April 25, June 27, and November 28. There will, probably, also be arranged on dates not yet determined, exhibitions of Roses, Dahlias, and Gladioli.

Ghent.—It is expected that Their Royal Highnesses the Prince and Princess ALBERT of Belgium will visit Ghent on the occasion of the 165th horticultural exhibition in that city on April 28.

MÉRITE AGRICOLE.—Messieurs les Préfets have received at the hands of the French Minister of Agriculture what reads like a severe rebuke, for allowing political considerations to sway them in their recommendation of gentlemen to receive the honour of the Mérite Agricole, a decoration intended exclusively to confer honour on distinguished agriculturists, including horticulturists.

DULNESS OF BARRACK LIFE.—We learn from the *Moniteur d'Horticulture* that the French authorities have devised a plan to furnish an interest to young soldiers stationed in barracks in country towns where the means of diversion and healthy recreation are scanty. Evening lectures on various subjects having been tried without much success, at last it has been decided to give instruction so far as may be in the subjects most interesting to the young soldier. Thus, in the case of regiments recruited mainly from the agricultural districts, familiar lectures and demonstrations on agricultural topics have been established with advantage. The soldiers are under no obligation to attend these meetings; but at the end of the course they visit agricultural experimental stations or other establishments to see carried out in practice what they have been told in the class-room, and where also they may have the opportunity of practising for themselves the art of grafting, which is of such importance in the Vine growing districts. Books, pictures, diagrams, lantern illustrations are supplied. Given competent teachers, no better plan of helping the young soldier and profiting the agriculture of the country could have been hit upon. In the circumstances Earl ROBERTS might take note of this among the reforms he is about to institute at the War Office. Already some of our officers in India and elsewhere are promoting the formation of gardens for the soldiers, and one of our most distinguished botanists was a Colonel, afterwards a General, on active service.

HORTICULTURE IN ST. ANDREW'S UNIVERSITY.—Dr. JOHN H. WILSON is giving a course of lectures within the University. The ancient seat of learning is specially adapted as a centre for a school of horticulture, and there is every reason to hope that, before long, the movement now inaugurated will lead to the institution of courses affording complete training in this subject. As an indication of awakened interest outside of the University, Dr. WILSON, as County Council lecturer, has given short courses of lectures on horticulture at thirty-four centres in Fife, with most gratifying results.

HARD JAM.—Old friends occasionally crop up under new names, and to-day the "Apple-butter" of our boyhood, with a little more evaporation, is sent over the world from America as "Hard Jam." By whatsoever name it be called, this hard fruit pulp will be welcomed by thousands, where there is no cool storage accommodation, and objection is made to the substitution of dried fruit, suffering as that often does under parasitic attacks, or the "curing" process of sulphurating. Our friends in Canada know how to make the old commodity, so do a good many farmers in the United States; and now the process is being taken up in California, we may expect to find "hard jam" pushing its way all over the fruit-loving world. This jam is not limited to Apples or Pears. Guava and Quince and Pineapple jam of the sort is largely consumed in New Orleans, sent thither from South America. Of course, it is understood that the pulp is subjected to the process of evaporation, and when sufficiently solid and cooled is cut up into bricks of any required size, which are done up in oiled or otherwise prepared tissue, packed in cases and shipped. No glass, metal, or earthenware receptacles are found necessary now, and consumers will be able to buy a brick of any sort of hard jam, just as they would a roll of Dorset or any other butter.

VEITCH MEMORIAL FUND.—At a meeting of the Trustees, held on January 15, it was decided to place at the disposal of the Glasgow and West of Scotland Horticultural Society two Veitchian medals and two prizes of £5 each, to be competed for at the exhibitions proposed to be held by the Society in connection with the Glasgow International Exhibition of 1901. They also decided to place a medal and prize of £5 at the disposal of the Wolverhampton Floral and Cottage Horticultural Society and the Taunton Deane Horticultural Society, to be competed for at their respective summer shows. It was further decided to offer a large Veitchian Silver Medal to Mr. R. IRWIN LYNCH, A.L.S., Curator of the Botanic Garden, Cambridge, and to Mr. W. B. LATHAM, Curator of the Birmingham Botanic Garden, in recognition of the eminent services rendered by them to horticulture.

NEW PUBLICATIONS.—We have to announce the publication of *The Rosarians' Year Book for 1901*, edited by the Rev. H. H. D'OMBRAIN, and published by BEMROSE & SON, 23, Old Bailey, London.—*How to Make the Most of the Land*, by SAMPSON MORGAN (W. H. SMITH & SONS).—*Willing's Press Guide* (125, Strand, London).—*A Practical Guide to Garden Plants, &c.*, by JOHN WEATHERS (LONGMANS, GREEN & Co.), 1192pp., 21s. net.—*Spot Disease of the Violet*, P. H. DORSETT, Washington, Government Printing Office.—*Peach-leaf Curl*, by NEWTON B. PIERCE, Washington, Government Printing Office.—*Diseases of North England Conifers*, by HERMANN VON SCHRENK. We shall have occasion to notice these books at greater length in an early number.

PLANT PORTRAITS.

ONOSMA TAURICA, Amateur Gardening, December 29.
MONTEBETIA CROCOSMIFLORA "GERMANIA," *Garten Welt*, January.

PHILADELPHUS GRANDIFLORUS, Amateur Gardening, January 5.

NYMPHEA FROEBELI, *Garden*, January 5.

SENECIO PETASITES, *Revue de l'Horticulture Belge*, January.

SALVIA SPLENDENS, *Revue de l'Horticulture Belge*, January.

LOBELIA TENUIOR,* R.Br.

THIS is an exceedingly pretty and graceful annual (fig. 20), growing from 1 to 2 feet high, slightly pubescent, and loosely branched. The lower leaves are three to seven-lobed in the apical part, cuneately tapering downwards into a long petiole; the upper leaves are often entire, linear or linear-lanceolate, acute, or obtuse. The flowers are borne on slender peduncles 1 to 3 inches long, and are about $\frac{3}{4}$ to 1 inch in diameter, three-lobed, very bright blue, with a white eye; the lateral lobes are broadly obovate, and the middle one transversely oblong. The ovary is narrowly obconical, about 2 lin. long, becoming 6 lin. long, and narrowly oblong in fruit. The subulate calyx-lobes are $1\frac{1}{2}$ to 3 lin. long.

It is a native of Western Australia, and was first introduced in 1835 by Messrs. Veitch, of Exeter, and others, but appears to have been lost to cultivation until last year. It is a most elegant species, but very lax in habit, yet producing abundance of flower, which are much larger and brighter than those of the common South African species, *L. Erinus*, used for bedding; and if by hybridisation or other means it can be dwarfed and made more compact, it would become, like *L. Erinus*, a valuable bedding plant. In *Paxton's Magazine of Botany*, at the place noted in the reference below, is a statement that the specimen sent by Messrs. Veitch, of Exeter, to Dr. Lindley, was "accompanied by a memorandum that the plant had been hung up in the stove for more than a month, without the least soil, and

without ceasing to flower." This is very remarkable, and most unusual in the case of an annual, and would tend to show that the plant can manage to subsist under very unfavourable conditions indeed.

FLORISTS' FLOWERS.

BORDER AURICULAS.

WITH the exception of border Polyanthuses, in connection with which, beautiful and varied as they are, there is yet still so much room for improvement from a florist's point of view, there are none other of hardy flowers for which I entertain so much fancy as border Auriculas. Mr. Douglas, writing about show varieties, strongly advises amateurs to raise seedlings from properly fertilised seed. I could wish some yet comparatively young amateur, with ample time and garden room, would take border Auriculas in hand, and strive to evolve from only such as we now have (and the variety at present is remarkable) not only a strain that gives finer pips, and generally brighter and more distinctive colours, but also stouter stems, as with so many the flower stems are weak, and let the flowers be ever so good they suffer much from lack of support. Colours in border Auriculas are somewhat thin or washy. Perhaps I had better say, too pallid, to give striking effects. But any sturdy plant carrying several stems and trusses of flowers, that gives erect habit and some fairly attractive coloration, does in the spring present in a border an attractive and beautiful object. What with constant selection of the most promising, and intercrossing of them also, and the second year removing them entirely from proximity to the general stock, there can be little doubt but that in ten years great advance might be made. Seed raising is easy. I sowed seed in a shallow box filled with fine soil last March, stood that box into one rather larger and deeper, covered it over with a large pane of glass, and stood it in a town back-yard. I easily raised in that way 150 stout seedlings, and have recently planted them out into a long border on an allotment at Surbiton, and no doubt every one will flower next May. What is thus possible, is far more possible with a frame or small greenhouse, as then thousands of seedlings could be raised annually. A.D.

LATE FLOWERING CHRYSANTHEMUMS.

As a decorative subject, the Chrysanthemum in flower at any time after the middle of September is valuable, but at no time is it more so than when it blossoms at Christmas and onwards for two months. Possibly because there are fewer Chrysanthemums in flower at that time than at any other, they are more appreciated than earlier. It may also be the smallness of the blooms as compared with those coming in November. The most popular varieties are white flowered, so useful in all seasonable decoration.

In order to produce late flowering plants, the method followed with earlier ones is quite applicable, excepting that two plants may be struck in one pot, grown on as one plant, and the pots in all stages are a little larger than for the ordinary single plant. The point should be removed once, when the plant is 5 inches high, afterwards an uninterrupted growth should be allowed, up to the forming of the flower-buds, unless slightly larger flowers are desired. In the case of the variety *L. Canning*, which gives such fine blooms in the month of February, the reduction of the flowers to one upon each shoot gives very good results.

The treatment required for this variety slightly differs from others; and one-year-old plants are much better than current year cuttings. In the former case, the sucker-like growths from the base are stronger, and give much better flowers the following year. After one-year-old plants in pots have flowered, cut them down close to the base, and store them away in a place that pests cannot enter, and afford air freely to promote a stocky growth. Early in April, shake the soil off the



FIG. 20.—LOBELIA TENUIOR: FLOWERS BLUE WITH A WHITE EYE.

* *Lobelia tenuior* (R. Br.).—*Prod. Fl. Nov. Holl.*, p. 564; *Bentham Fl. Austr.*, vol. IV., p. 126. *L. heterophylla*, *Bot. Mag.*, t. 3784; *Paxton's Magazine of Botany*, vol. VI., p. 197, with plate. *L. ramosa*, *Munro's Botanist*, vol. II., t. 93.

roots, divide them, leaving a couple of shoots on each, and plant out in well manured, deeply dug soil at 1 yard apart, and see that they are afforded water in dry weather. Let the soil be stirred often, and apply a slight mulch of partially decayed stable-dung in the month of June. Do not top the plants. In September cut around each plant with a spade, and in a week or two lift and pot them, or plant out in a disused Cucumber-pit. A daily syringing of the leaves will soon induce a renewal of growth and cessation of flagging.

In the case of ordinary varieties grown wholly

blooms quite late; Madame P. Cadbury has fully developed blooms with florets of great substance; Mrs. M. Simpson is white, with a creamy tinge, and a shapely flower, the florets semi-drooping; Christmas Favourite is of tall growth.

Yellow-flowered varieties are next to white most in favour. W. H. Lincoln is still worthy of being included, its deep green foliage so enhancing its orange-coloured flowers. Miss Ethel Pilkington has a flower with long drooping florets, very graceful; Golden Dart has narrow florets; Phœbus and Edith Tabor are both late when suitably

AGAPETES MACRANTHA

is one of those semi-tropical, hardwooded plants which everyone admires, and nobody grows, probably because it is of little use for cut flowers. It was introduced as far back as 1851 to the establishment of Messrs. J. Veitch & Sons, and was again shown by those gentlemen at the Royal Horticultural Society on Tuesday last. The general appearance of the plant is well shown at fig. 21. The flowers are of a waxy consistence, deeply 5-ribbed, cream coloured, flushed with pink, and

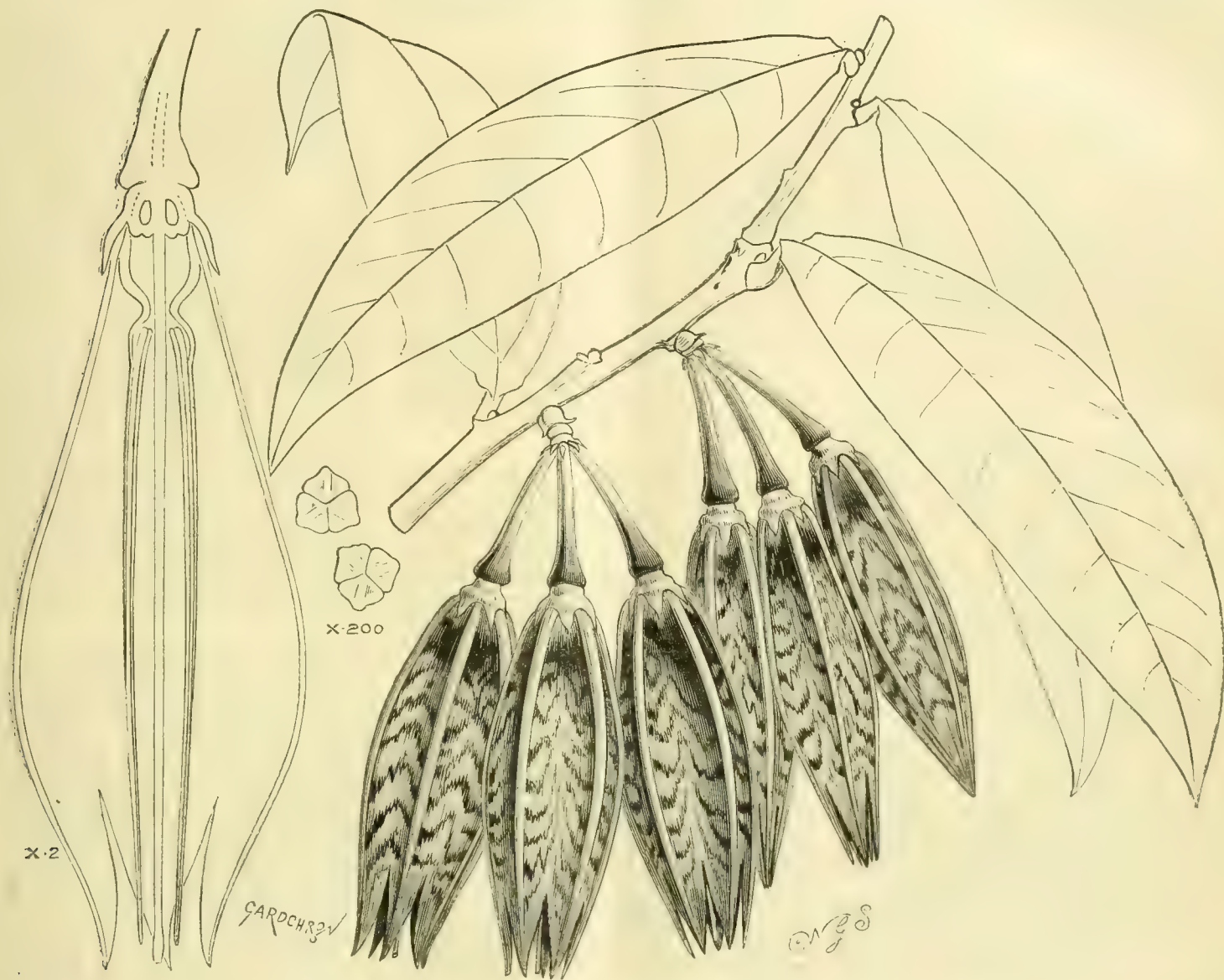


FIG. 21.—AGAPETES MACRANTHA: FLOWERS CREAM-COLOURED, MOTTLED, AND STRIPED WITH PINK.

in pots, a few stakes will be required to keep the branches in an upright position. The elaborate methods of staking customary a few years ago find little favour nowadays. All varieties of the Chrysanthemum will succeed if planted out in the open air and lifted in the autumn, although growing them in pots entirely is the method mostly practised.

Amongst white-flowering sorts, in addition to L. Canning, The Queen produces fine flowers of the purest white; C. niveum, an early flowerer, when grown for big bloom, can be grown so as to flower late; Mrs. Weeks, too, is another capital variety for this kind of work, as also Winter Queen, which has erect, stiff peduncles, a point distinctly of use in decorative work; plants of Florence Molyneux with once topping, produce abundance of small

treated; Golden Gate is shaded tawny, and an excellent variety. Other colours are represented by Edwin Molyneux, crimson and gold; Etoile de Lyon, white flushed pink; Henry Weeks, rosy crimson; H. J. Jones, velvety crimson; and Royal Standard, crimson red. E. Molyneux.

FRUIT REGISTER.

THE "finest Apple on earth." An advertiser bids us test this by sending for a "stone"! It might be supposed that Stone Pippin or Loddington Seedling was intended; but no; it appears that Bramley's Seedling was intended, and no doubt that is an excellent Apple.

with deeper V-shaped bars of the same colour. The plant belongs to the Vaccinium family (Vacciniaceæ). The pollen-grains, as figured by Mr. Worthington Smith, are triangular and 3-lobed.

MALFORMED BEGONIA TUBERS.

SPECIMENS of Begonia-tubers in winter resting condition were recently received for examination. The healthy tubers were good examples, ruddy-fleshed, rounded, and with the usual depression on the upper side containing one or more buds. The malformed tubers complained of were very irregular in shape, and a mass of knobs of all sizes, each knob being a bud, or the remains of one. Examination showed that some of the buds were mere hollow shells containing brown debris of

once living tissue, others were soft or pulpy and discoloured; a few had the ruddy firm flesh of healthy buds. The tubers were generally firm, sometimes soft, but always eaten into by decaying tissue at the base of the decaying buds. Seeking now for a cause of the trouble, decayed parts contained nematode worms (eel-worms), and traces of fungi. The soft, pulpy parts contained eel-worms only, and on cutting open buds which were not discoloured and only slightly soft, the worms and their eggs were seen under the microscope lying in tissue which was scarcely injured. These nematode worms appear thus to be the first intruders, and so far as one can judge at this season from the tubers alone, they must be regarded as the cause of the rotting. Discoloration begins near the centre of the bud as a brownish line, which extends till only a shell is left to represent what was a bud. These tiny worms are extremely common on decaying remains of plants, and it is not easy to say when they are the primary cause of a disease, or when they are only scavengers. In the present case the general symptoms of the malformation agree with cases where skilled investigators named these worms as the cause of disease. We consider the principal symptom on these diseased tubers to be the large number of more or less unhealthy buds. Miss E. A. Ormerod, in describing tulip-root of Oats, says, "The swollen stem is usually surrounded by a number of small, doubled-up shoots, pale in colour, and bent to and fro instead of being properly extended." Tulip-root, after examination by Miss Ormerod, whose results were confirmed by Professor Ritzema Bos and Dr. de Man, two Dutch experts, is now regarded as the work of nematode eel-worms. Ritzema Bos also investigated malformed Strawberry-plants sent in 1890 from the south of England; his conclusion is that nematodes were the cause (*Zeit. f. Pflanzenkrankheiten* I., 1891, pp. 1-16). Illustrations are given of a plant with a swollen goarled head, and malformed buds and flowers. The stems were abnormally thickened, much branched, and the crown was a mass of buds (described as like tiny bulbs), which never unfolded properly. Rhubarb plants examined by us last year, and found to contain numerous eel-worms at the junction of healthy and diseased tissue in the crown, had also an abnormally large number of poor buds. Galls on Beetroot, and the roots of other plants have been produced by nematodes after carefully performed infections. Professor A. D. Selby, of the Ohio Experiment Station, reports in 1896, large galls on roots and stems of Begonia plants where eel-worms were present. They also caused a disease in Begonia-leaves in England (*Gardeners' Chronicle*, September 13, 1890, with figures).

Nematode eel-worms are brought near plants in soil or manure. In order to sterilise suspected soil where moderate quantities are required for potting plants, three methods are possible: (1), thorough exposure to frost; (2), heating or steaming; (3), treatment with some substance. In Britain, frost is doubtless our great natural remedy against soil parasites, but its effects are only partial because it does not penetrate far enough in the soil or soil-heap, and the thick-coated eggs of eel-worms are fairly frost-proof. Steaming or heating soil is done in special cases (e.g., for Fern-spore culture); its application is necessarily restricted, although it is one of the best remedies. Various substances have been tried against eel-worms, and of these quicklime gives the best results; it is proved by experiment that one part of lime in four to six parts of soil is deadly. This, however, is probably too much lime for most plants, but small applications made from time to time would at least check the increase of the worms. Fresh farmyard-manure brings the eel-worms, but in the present case the grower mentions that little manure is used. Another source of infection is impure water, especially manure-water used as a fertiliser.

The nematodes in these Begonias, as has been noticed in other plants, are not able to cause com-

plete extermination. The sender says that tubers, which pass through the winter, grow and flower well, the cuttings strike, grow, and flower, yet their tubers go off again malformed towards the end of the season. Whether this can be prevented by cultivation or by hybridising is a matter for experienced growers to decide. Irregularly-formed tubers are mentioned as occurring on hybrid Begonias by Dr. J. H. Wilson at the Royal Horticultural Society's Conference last year. That this has something to do with the weakness of the tubers in the present case, thus disposing them to attack by the nematode worms, is a suggestion thrown out for others to decide. *W. G. S., Leeds.*

HOME CORRESPONDENCE.

THE TREATMENT OF CYMBIDIUM TRACYANUM.

—In reply to your correspondent, Mr. John Taylor, as to my treatment of Cymbidium Tracyanum, they are potted in a compost consisting of black, turfy peat and loam in equal parts, with a plentiful sprinkling of finely-broken oyster-shells and sharp sand, and grown in a cool greenhouse on the north side, shaded during the months of June and July; they being on staging near the glass with plenty of ventilation beneath them. Growing the plants in high temperature is undoubtedly the cause of so many not flowering. When re-potting is absolutely necessary, I give as small a shift as possible without disturbing the roots. I have no doubt but that a couple of seasons occupancy of a cool, airy greenhouse will bring about the desired result. *J. O. Clarke, The Poplars, Avenue Road, N. W.*

THE DECAY OF PEARS.—A problem for fruit-growers and men of science to solve is found in the widespread character of unseen decay found in the middle of fruits of the Pear. Fine fruits, apparently of the soundest character and luscious nature, showing in their centre that brown softness which is commonly termed sleepiness, but which, common enough in some varieties, seems to mark fruits very generally this year. It is very natural to ask whether this decay in fruits apparently so sound and admirably matured is inherent and incurable, or whether it is the result of absence in the soil of some essential ingredient, or whether it is the product of some fungoid spores which hybernate and mature in the fertile organs of the fruit, then commence to destroy them, and in all too brief time the surrounding pulp. It is to be feared that growers of Pears will find their stocks of fruit rotting wholesale from this cause. Very recently I was in a large fruit-room where one or two fruits, cut to test the flavour, showed the decay in a moderate stage of development. That caused the cutting of fruits of other varieties, and in all cases the same evidences of rotting were present. If this decay be so general, it becomes a matter for serious inquiry whether any remedy can be found, and if none be possible, then to ask whether it is worth while to grow so many Pears, seeing that after all the waste in fine fruit is relatively enormous. Few subjects connected with gardening seems just now worthy of more attention than does this of Pear decay. *A. D.* [*See Gardeners' Chronicle*, July 11, 1885, p. 51. Ed.]

NEW PEARS.—I am glad to see Mr. T. H. Slade (*Gardeners' Chronicle*, p. 14) write so favourably with regard to the new Pears Charles Ernest and Le Lectier, as I have planted both varieties this season. It would, I feel sure, be interesting to other readers of this journal to be informed of the number of varieties of Pears that ripen their fruits after December 1, that have been introduced within the last forty years, all points considered, which are the equal of Winter Nelis, Glout Morceau, Easter Beurré, Josephine de Malines, or Bergamotte d'Espérance; these others, though they are not so free or so constant in bearing, viz., Jean de Witte, Doyenné d'Alençon, and Olivier des Serres. The last-named grown on an east wall is of good quality for so late a Pear. It is sweet, with a pleasant aroma, but is a little gritty near the core. The variety Nouvelle Fulvie, which Mr. Woodward exhibited in such fine condition at a recent meeting of the Royal Horticultural Society, has been very fine and very handsome here

this season grown on a south wall, and under the most favourable conditions; the quality of which, however, left much to be desired, being too much of the sugar-and-water kind. Last year the fruits were equally fine, but they did not ripen fit for dessert; hence I should hesitate to recommend the variety for general cultivation. In large establishments Pears are in great request till the end of this month, and gardeners who have to supply good Pears till then are glad of such good varieties as Charles Ernest and Le Lectier. *T. Turton, Sherborne Castle, Dorset, Jan. 8.*

DIAMOND JUBILEE GRAPE.—In reply to the Messrs. Buchanan's article, p. 480, in *Gardeners' Chronicle* for December 29 of last year, one can only marvel that such successful Grape-growers can make the charge that "Caledonicus" stated that Black Morocco and Morocco Prince were its parents. I need hardly add that such assertions were never made by me, and therefore I am under no obligation to prove them. What most of us are looking for is a true and unvarnished account of the history and origin of the Diamond Jubilee. Is it a chance or a pedigree seedling—a sport, or what? Did it first reveal its merits at the Forth Vineyard, or was it bought in, and, if so, of whom? What we practical horticulturists cannot understand is the reticence maintained as to the origin and true character of the Jubilee Grape. Another question may be put to the vendors—How was it that the vendors missed an opportunity by not showing it at the great closing show of the year of the Scottish Horticultural Society, eager to welcome all the best Grapes, Chrysanthemums, and other good and best things of the closing century? The Grape looked in sound condition at the meeting of the Royal Caledonian Society about the middle of September, and it is scarcely conceivable that a Grape so praised then as one of the finest of the dying and coming century should have vanished before the great Waverley show of Chrysanthemums. If the Diamond Jubilee Grape is superior to our existing varieties, most of us ought soon to grow it; but we are naturally anxious to avoid blocking the entrance into the new century with Grapes so like the old as to be indistinguishable by experts from them—or which can be classed for practical purposes, as too much alike. *Caledonicus.*

GREENING POTATO-SETS.—I was rather surprised to read Mr. Gaut's statement, that the practice of exposing seed-tubers to the air, before storing them for the winter, that they may well be greened best, largely prevailed. I must say of all the gardens, large and small, I have been in during the past twenty years, I do not remember to have once seen such practice. No doubt impressions once did prevail that exposure of the tubers in the way mentioned was good, but I do not think it is a general practice now. One of the best proofs that such practice is useless, is found in the fact that given a moderately temperate winter, tubers accidentally left in the ground all the winter always send up very strong growth. It would not in the least matter whether seed-sets were exposed to air and light at all during the winter, were it not absolutely essential that they be so exposed and also kept cool, that they be maintained in a state of rest, and also when they do break shoots, as under any conditions of storing they inevitably will, as the spring draws on; the shoots thus produced shall be stout, sturdy, well greened, and in such condition that they can be saved and planted on the tubers, rather than be pulled off and wasted, as must be done if stored where light is absent. I hope as an old Potato-grower I may be excused from holding the notion which Mr. Gaut seems to share in, that Potato varieties naturally deteriorate. I have never found that to be so, when the sets are well and carefully wintered. It is the reckless method of storing sets in clamps or pits, or in heaps or tubs, where lying in bulk they heat and rapidly produce blanched shoots which exhaust the tubers, and have to be removed before planting, that has caused deterioration. My old friend, Mr. Robert Fenn, has stocks of his own raising thirty years old, which he has carefully preserved, that are as good to-day as ever they were. *D.*

—We should suppose that in a wild state the tubers are mostly green, excepting on the lower side, which lies on the earth, for but few of them grow underground. Experience has

taught mankind that the tuber must be blanched to make it a safe article of food, and blanching is most expeditiously and cheaply done by "earthing up." Of course Nature can be improved, and a blanched set may be more productive, hardier, a better resistant of disease than a green one, but we want more light on the subject. *M.*

DECAYING TIPS OF ODONTOGLOSSUM LEAVES.

—Of late years this so-called disease has become prevalent everywhere. Why, no one seems to be certain, neither does anybody seem to be able to eradicate it. My plants of *O. crispum* are strong enough to please most people, but they have it, perhaps not so badly as some I have seen, but quite enough to satisfy anyone; more than enough to dissatisfy me. I have heard many reasons for the advent of this disfigurement, but as far as I yet see myself, none will stand when analysed. It is reasonable for the three-year-old leaves to decay at the tips, but when a pair of tips decay on leaves of the unfinished pseudo-bulb, it must be radically wrong. In this case I should expect the plant to be much too wet at the roots, and to be decidedly unhealthy, but such is not the case; the plant is a perfect picture, grown drier than usual, but of exceedingly vigorous habit. This is an exceptional case, as but comparatively few of the new leaves are tipped. Take a reverse case, a plant kept quite wet, of equal habit, has its last year's leaves "tipped," whilst this year's are perfect, therefore neither drought nor damp seem to offer any explanation. Plants near to those farthest from the door are affected alike, scattered through the houses anywhere, in my houses, and in all Orchid-houses that I have seen; therefore it cannot be defective ventilation or cultivation, else the plants in some gardens would be exempt, and others badly attacked. Well grown and badly grown plants have it alike, both high on the hills and low in the valleys, with north, east, south, or west aspect. What is that thing common to all of us that we do, give, or have amongst the plants? I am doing my best to discover, so are many others, and I think if we ventilate this matter through the means of the *Gardeners' Chronicle*, we may find out to what undesirable condition we have attained in the last few years. Five or six years ago I had no such malady amongst my plants, nor did I observe it anywhere else; now I am occasionally told, "we have got used to it, so we put up with it," but as I do not intend to put up with it, I want to get rid of it, and shall be very pleased to hear of anyone that has done it, and how he did it, for a fine *Odontoglossum* plant with decayed tips is a sad sight to me, even if the plant is in a good state of cultivation. *De B. Crawshaw, Rosefield, Sevenoaks.*

GREENING V. NON-GREENING OF POTATO SETS.

—When I grew a few bushels of Potatoes in the garden at Swanmore Park, I always thought it better to expose them to the light till they had become green, but now that I cultivate tons of them I do not lay them out to green, and the results are identical, and seldom is there much disease among them either. I never dig the tubers till they are quite mature, and then only in dry weather, even if the crop be not lifted for a week or two afterwards. I think the full maturity of the tuber is just as well gained under the soil as it is in the sun's rays when spread out thinly, as is so common when greening is practised. When a new variety is purchased from a seedsman, greened tubers never come, and generally it is the rule to look for a heavy crop from new seed, and as a rule these hopes are realised. If seedsmen and nurserymen, who handle many tons of Potatoes, do not think it better to have them greened, there cannot be much value in the extra trouble involved. Bad culture has much to do with indifferent results, not only in the weight of the crop, but in determining quality and inducing disease. So long as cultivators plant thickly, employ rank manures at planting-time, and generally prepare the land in a slovenly manner, we shall continue to hear complaints about the inferiority of Potatoes. *E. Molyneux.*

THE MILDNESS OF THE SEASON.—On Jan. 1 the following flowers were gathered in the flower gardens here, enough wherewith to fill a large basket very prettily:—*Achillea aurea*, *A. millefolia*, *Anemone blanda*, *A. coronaria*, *A. fulgens*, *Arabis alba* fl. pl., *A. bellidifolia*, *Bellis perennis* fl. pl., in variety; *Porago officinalis*, *Berberis Darwini*, *B. japonica*, *Calendula officinalis*, *Carna-*

tion *Miss Audrey Campbell*, *Cheiranthus Cheiri*, *Sutton's Paeonix*, *Chimonanthus fragrans*, *Chrysanthemum indicum* *Golden Gem*, *Florence Davis*, and three other varieties; *C. frutescens*, *C. f. latifolia*, *C. coccineum*, *Daphne Mezereum*, *Escalonia punctata*, *Erica carnea*, *E. c. alba*, *E. stricta*, *E. vagans*, *Gentiana acaulis*, *Geum minimum*, *Helleborus niger*, *H. orientalis*, *Jasminum nudiflorum*, *Lonicera fragrantissima*, *Leptospermum scoparium*, *Myosotis dissitiflora*, *Othonopsis cheirifolia*, *Polyanthus Gilbert's Harbinger*, and many other varieties; *Phlox amena*, *Rosmarinus officinalis*, *Rose Tea* *Mdme. Lambard*, *R. Crimson China*, *R. Souvenir de la Malmaison*, *Rhododendron Nobleum*, *R. Jacksoni*, *Spiraea Thunbergi*, *Strawberry* (half-grown fruit of *Vicomtesse H. de Thury*), *Veronica longifolia alba*, *Viola odorata*, *V. o. alba*, *V. o. flore-pleno*, *V. tricolor* (many varieties), *Viburnum Tinus*, *Vinca minor*, *Ulex europaeus*. *Magnolia grandiflora* had a flower half grown, but the sun-heat has not been sufficient to mature it; the wild Honeysuckle had young shoots upwards of an inch in length. This is a lengthy list, but it is so interesting to gardeners of all sorts that I am induced to send it for publication. The weather changed on the 1st, and we had 3° of frost at night, which increased gradually until 11° were recorded on the 9th, and many of the above have suffered. *Eranthis hyemalis*, *Winter Aconite*, and *Snowdrops* are later than usual this year, and none is in flower at the present time (January 12). *W. H. Divers, Belvoir Castle Gardens, Grantham.*

RAINFALL IN 1900 AT COMPTON BASSETT, WILTSHIRE: Height above sea level, 385 feet:—

Month.	Total Depth.	Great st fall in 24 Hours.	No. of Days on which 0.1 or more fell.	
	Inches.	Depth.	Date.	
January... ..	3 25	.69	6	22
February	5 81	.87	15	21
March	1 66	.49	21	12
April	1 96	.52	3 & 4	16
May	1 64	.39	22	12
June	1 96	.24	24	18
July	1 73	.49	31	9
August	2 93	.64	9	15
September .....	.87	.50	26	7
October...	3 11	.61	29	17
November	2 78	.41	24	22
December	5 15	1 80	30	23
Total	32 35	...	...	...

W. A. Cook.

RAINFALL FOR THE YEAR 1900 AT RUMWOOD, LANGLEY, MAIDSTONE:—

January ...	3.79 inches.	July...	0.91 inches.
February ...	4.80 "	August ...	1.96 "
March ...	1.26 "	September...	0.51 "
April ...	1.21 "	October ...	2.12 "
May ...	0.87 "	November ...	2.58 "
June ...	3.75 "	December ...	2.60 "

Total... 26.36 "

X. Y. Z.

RAINFALL AT CASTLE EDEN, DURHAM.—The rainfall at this place during the year 1900 was greatly in excess of the past seven years. In the following table will be found the quantity of rain per month:—

January ...	2.91 inches.	July ...	1.61 inches.
February ...	4.47 "	August ...	4.84 "
March ...	1.75 "	September ...	.71 "
April ...	.96 "	October ...	6.47 "
May ...	1.29 "	November ...	2.65 "
June ...	2.90 "	December ...	2.58 "
Total ...	...	...	33.74 "

Rain fell on 111 days. The heaviest rainfall was on two days: August 4, when 2.45 inches fell; and October 27, when the quantity was 2.40 inches. Totals for seven previous years were:—

1893... ..	19.15 inches.	1897	23.29 inches.
1894... ..	23.88 "	1898	21.47 "
1895... ..	20.54 "	1899	27.75 "
1896... ..	24.67 "		

William Fulford, gardener.

RAINFALL AT PENCARROW, CORNWALL, DURING 1900:—

January ...	6.32 inches.	July ...	1.30 inches.
February ...	5.85 "	August ...	2.93 "
March ...	2.64 "	September ...	2.12 "
April ...	2.28 "	October ...	3.76 "
May ...	2.69 "	November ...	6.59 "
June ...	3.80 "	December ...	6.34 "
Total ...	...	...	46.12 "

The greatest fall during twenty-four hours was 1.48 in. measured at 9 A.M. on February 15; over 1 inch was also measured on January 7 (1.24), and on March 20 (1.19 in.). Rain fell on 223 days; November was the wettest month, and, curiously, the total rainfall during January and December differed by only 0.02 in. *A. C. Bartlett.*

ROSE CRIMSON RAMBLER.—The flowering of this Rose in the autumn, to which reference has been made in the *Gardeners' Chronicle*, is most unusual. A plant of four years old, growing on the lawn in the garden here, gave quite a nice lot of bloom-buds last month, but the blooms were not quite perfect. The evanescent flowering of this charming Rose is its only fault. *E. M., Hants.*

COLLETIA CRUCIATA.—Your note on the above curious plant proved interesting to me, as at present a plant of this species is in flower in the pleasure-grounds at Killerton. It forms a bush some 5 feet in height, and is truly a formidable looking customer, and its huge spines have at the first glance a striking resemblance to those of *Encephalartos horridus*. Here there is also a good plant of *C. spinosa* 18 feet high, and of the two it is the more ornamental. During the month of November it was covered with its small white flowers. Both seem to be quite hardy here; they are on the outskirts of the pleasure-grounds, and fully exposed to the full force of the west winds, which are very prevalent here. *John Coutts, Killerton, Broadclyst, Devonshire.*

VIOLET AMIRAL AVELLAN.—I am growing Admiral Avellan Violet, and consider it is the best single-flowered variety in the trade. It is a strong grower, gives plenty of runners, and produces the largest flowers, with long stalks. I also find it is the earliest in the year to flower. I cannot do better than grow this variety. *Edmund Bland, Fordham, Soham.* [We think that you are right. *ED.*]

IRELAND.

THE DUBLIN MUSEUM.

ON Tuesday afternoon, January 8, in the herbarium, Professor Johnson, D.Sc., discoursed on "Parasitic Flowering Plants." The lecture was fairly well attended, and ladies formed a large proportion of the audience. After pointing out the peculiarities of plants in general, he showed the mode of life of a parasitic plant, and taking the *Cuscuta* as the basis of his remarks. When alluding to the great Dodder, *Cuscuta europæa*, apart from its interesting life history, he dwelt on the economic harm it does to meadows, &c., in some parts of Europe. For example, in Hungary and Germany the cultivation of Clover is barred by its presence, which led to the eduction that seed merchants should be extremely cautious and ever on their guard against this pest, as a microscopic quantity might cause great damage to farmers. The question of effectively grappling with this pest was reviewed, but experience did not speak favourably of any remedies applicable to grass and Clover, and reliance was had chiefly on a vigorous plant and grazing by sheep for a few years. He then glanced at the *Orobanchæ*, taking the Broom Rape, *Orobancha epithymum*, as typical; likewise Cow-wheat, and the curious-looking Toothwort, *Lathræa squamaria*, was fully treated; the *Loranthaceæ* were spoken of, and the popular winter-flowering parasite was treated at length, *Viscum album*, or Mistletoe, and the miniature Mistletoe which revels on the Juniper, was treated in full; *Viscum Oxycedri*, better known as *Arcanthobium Oxycedri*, and dried specimens of many of the above plants were displayed, and a brief glance at the *Monotropas* brought the lecture to a close; afterwards, in an adjoining room, many mounted slides of the most interesting items were on view. *A. O'Neill.*

SOCIETIES.

ROYAL HORTICULTURAL.

JANUARY 15.—The Royal Horticultural Society's meeting on Tuesday last, in the Drill Hall, James Street, Westminster, was not nearly an average one from any point of view. If a Fellow from a distant locality, happening to be "in town," had visited the hall, he would most certainly have experienced considerable disappointment. The fact is, these meetings at the Drill Hall differ from each other in respect to the number of exhibits, and in interest also, to a surprising extent, and although a few of those who most regularly attend them are generally able to form an approximate estimate of a particular one before they have seen it, there are occasions when the unexpected happens to the fullest degree. The weather since Christmas has been cold, and the early days of the present week were succeeded by frosty nights. On Monday night, for instance, as many as 12° of frost were registered in a number of gardens, and it is fair to assume that these circumstances were responsible for the detention in the glasshouses at home of tender plants that otherwise might have been shown. At the same time, the meeting appeared to furnish another proof that during the "dead of winter," monthly meetings would suffice to meet the requirements of exhibitors.

The FLORAL COMMITTEE recommended two Awards of Merit, one in respect of a hardy *Cyclamen*, and the other to a pale, sulphur-coloured variety of *Primula floribunda*. A group of *Aucubas* in berry, from Mr. RUSSELL, Richmond, deserve special mention.

The FRUIT and VEGETABLE COMMITTEE recommended but one First-class Certificate, and this was to the well-known Pear *Josephine de Malines*, which has for so long remained unhonoured.

The ORCHID COMMITTEE recommended awards, including a Botanical Certificate and four Awards of Merit. In comparison with other exhibits, Orchids were a prominent feature.

At the GENERAL MEETING held at 3 P.M. an unusually large number of new Fellows were elected to the privileges of the Society; and a LECTURE by Professor Beach, of America, upon "Recent Developments in the Treatment of Diseases and Insects Injurious to Orchard Crops," was read by the Secretary, Rev. W. Wilks, M.A., V.M.H.

Such was the first meeting of the Royal Horticultural Society for the new year, and what was probably the first twentieth century public exhibition of horticulture in the United Kingdom.

As was remarked in our pages last week, some ten Committee meetings, including those of the Royal Horticultural Society, were held on Tuesday, which was a very busy day for many.

Floral Committee.

Present: W. Marshall, Esq., in the Chair; and Messrs. Owen Thomas, C. T. Drury, G. Nicholson, H. B. May, J. H. Fitt, G. Reuthe, J. Hudson, J. F. McLeod, J. Fraser, C. Jeffries, W. Bain, C. F. Pearson, C. E. Shea, W. J. James, C. Blick, G. Paul, and H. J. Jones.

Aucubas in berry were grandly exhibited by Mr. JOHN RUSSELL, Richmond Nurseries, Richmond, Surrey; these included *A. vera*, *A. longifolia*, and *A. japonica*. The plants were about 1 foot high, in 5-inch pots, and were most liberally furnished with scarlet-coloured berries. We have never seen a collection of dwarf pot-plants so heavily fruited. *A. vera* was, perhaps, even more remarkable from this point of view than the others, and the berries are more effectively displayed than in the case of *A. longifolia*, which often makes a little growth beyond the berries (Silver Flora Medal).

MESSRS. GEO. JACKMAN & SON, Woking Nursery, Surrey, exhibited several hardy flowering plants and bulbs, *Helleborus orientalis*, varieties *Mars* and *Queen of the Netherlands*, both bearing large dull purple-red flowers, closely veined with deeper colour; *Daphne Blazayana* in bloom (white); also *Iris reticulata*, *I. Sindjarensis* (one of the most delicately coloured *Iris*es), *I. Bakeriana*, and *I. histrioides*, *Cyclamen Coum*, and *Narcissus cyclamineus*.

MESSRS. BARR & SONS, King Street, Covent Garden, London, exhibited several varieties of bulbs grown in bowls, containing small pebbles and water. Four of these contained a variety of *Narcissus tazetta* (Chinese Sacred Lily). Three others were furnished with white Roman *Hyacinths*, very finely flowered indeed; and in another was the bluish-flowered Italian *Hyacinth* "Harbinger." In pots were *Iris Bakeriana* (purple), and *Narcissus bulbocodium*, white and yellow-flowered varieties.

MESSRS. WALLACE & CO., Kilnfield Gardens, Colchester, showed *Iris Danfordiae*, see fig. in *Gardeners' Chronicle*, March 17, 1900, p. 170; *I. Bakeriana*, *Gardeners' Chronicle*, 1890, vol. vii., p. 293; and *I. Heldreichi* (fig. in *Gardeners' Chronicle*, March 17, 1900, p. 171, as *I. stenophylla*), colour bluish-purple, with deep purple tips to the limb.

Sprays of *Manettia bicolor* bearing flowers were shown by Mrs. F. W. CAMPION, Mill Side, Reigate (gr., Mr. S. Fitt).

A species of *Pelargonium* from Central Africa was shown by Mr. W. GOODLIFFE, Northcourt Road, Worthing; it had very inconspicuous pale sulphur-coloured flowers.

MESSRS. JAS. VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea, again exhibited plants of *Coleus thyrsoideus*, described on p. 466 of *Gardeners' Chronicle* for December 22 last (see fig. on p. 33). A plant in bloom of *Agapetes macrantha* (*Thibaudia macrantha*) was also shown by Messrs. JAS. VEITCH & SONS, who introduced the species from the Kola Mountain, Moulmein, in 1849. The flowers are cream-coloured, flushed with rose, and conspicuously veined with crimson. The extreme tips of the petals are rich cream colour, and recurve sharply. This characteristic is not shown in our illustration (fig. 21, p. 47), which was prepared from a specimen which flowered in the Birmingham Botanic Gardens.

MESSRS. SINCLAIR & CO., 19, Eldon Street, Finsbury, London, exhibited garden syringes, improved pneumatic diffuser, and other appliances for spraying plants.

Awards.

Cyclamen libanoticum.—A pretty little hardy species, with rather small, pale rose-coloured flowers with purple blotches at base, about 4 inches high. Foliage marbled with white. From Messrs. G. JACKMAN & SON, Woking Nursery, Surrey (Award of Merit).

Primula floribunda grandiflora isabellina.—A very pale sulphur-coloured variety of the well-known *Primula floribunda*, from Sir TREVOR LAWRENCE, Bart., Burford, Dorking (gr., Mr. Bain), (Award of Merit).

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair; and Messrs. Jas. O'Brien (Hon. Sec.), H. Ballantine, R. Brooman-White, C. J. Lucas, H. J. Chapman, W. H. Young, H. A. Tracy, J. W. Potter, F. J. Thorne, E. Hill, T. Rochford, A. Hislop, J. Jaques, T. W. Bond, E. Ashworth, W. Cobb, J. Douglas, and J. Colman.

Despite the cold weather, there was an interesting display of Orchids, the most important being a good group of plants and cut flowers of hybrids staged by Messrs. J. VEITCH & SONS, and for which a Silver Flora Medal was awarded. In the group were a good plant of *Angreum* × *Veitchi* *burneoides* (sesquipedale × *eburneum*), the plant in this case more nearly approaching *A. eburneum*, from which, however, it differed by having an elongated, white labellum. The plant and flower curiously resembled the *Madagascan Fournierianum*. Among the *Cypripedium*s, we observed a fine set of the hybrids of *C.* × *Leeanum*, with *C.* Boxalli, and *C.* villosum, which are known as *C.* × *Euryades*, and *C.* × *Leander*, or *Leonidas* and *Adrastus*. *C.* × *Euryades* maculatum had a very fine white dorsal sepal, richly spotted with purple; *C.* × *E.* albidum was of a delicate yellowish-green and white, with some purple markings; *C.* × *E.* Langleyense had a broad purple band up the dorsal sepal; and the many other varieties showed great differences, both in form and colour. Other fine varieties were *C.* × *Bison* *giganteum*, *C.* × *Morgania* *Langleyense*, *C.* × *Minos*, *C.* × *Lathamianum* *superbum*, and some very distinct *C.* × *Leeanum*. The *Lælio-Cattleya*s were represented by *L.-C.* × *Wellsiana*, *L.-C.* × *Bryan*, *L.-C.* × *Coronis*, *L.-C.* × *Pallas*, and others; and *Zygopetalum* × *leucociliatum* (Burkii × Mackayi), with fine white lip, and greenish purple-mottled sepals and petals, showed great improvement since it was first shown.

Baron Sir H. SCHRODER, The Dell, Staines (gr., Mr. H. Ballantine), showed a small group of rare cut Orchids, the principal feature in which were a grand five-branched spike of the showy white and purple *Odontoglossum crispum* "Princess Christian;" the showy purple-blotched *O. c. Sanderianum*; and *O. Nevadaense*, which is still a rare species. With them were several hybrid *Cypripedium*s raised at The Dell, some of which will develop into good things.

FRED HARDY, Esq., Tyntesfield, Ashton-on-Mersey (gr., Mr. T. Stafford), sent a collection of cut flowers of *Cypripedium*s, comprising *C.* × *Minnie* *Ames*, *C.* × *Swinburnei* *magnificum*, *C.* × *Calypso*, "Winn's" variety; several fine forms of *C.* × *Leeanum*, of which the dark-coloured *C.* × *L. reticulatum* was the best; *C.* × *Morgania* *Burfordiense*, *C.* × *Macnabbiana*, &c.

MESSRS. HUGH LOW & CO., Bush Hill Park, sent two large pans of the typical *Cypripedium callosum*, and a plant of *C. callosum aureum*, resembling *C. c. Sanderi*, but with rose-tinted tips to the petals.

H. S. LEON, Esq., Bletchley Park (gr., Mr. A. Hislop), showed a fine plant of *Sophronitis grandiflora gigantea* with three very large brilliant scarlet flowers.

DE B. CRAWSHAY, Esq., Rosefield, Sevenoaks, showed *Odontoglossum* × *Wilkeanum* "Lionel Crawshay," a fine form of the yellow blotched with red-brown type.

A. H. SMEE, Esq., The Grange, Hackbridge (gr., Mr. Humphreys), sent *Lælio-Cattleya* × *elegans* "Smees' variety," a remarkable form, intermediate in shape between *L.-C.* × *Schilleriana* and *L.-C.* × *elegans*. The sepals and petals were of a greenish tint, flushed with rose; the base of the lip white, the front-lobe and broad margins of the side-lobes ruby-purple.

H. F. SIMONDS, Esq., Woodthorpe, Beckenham (gr., Mr. Geo. E. Day), showed a grandly-grown plant of *Dendrobium spectabile* with fine spike of (together) thirty-five flowers; also *D. spectabile Simondsii*, with the lip much longer than usual, white veined with dark purple. F. M. BURTON, Esq., Gainsborough, showed a good variety of *Cattleya Walkeriana*. F. BIBLEY, Esq., Hardwicke Grange,

Shrewsbury (gr., Mr. J. Taylor), sent flowers of *Lælia anceps* "Lady Stanley Clarke," a very large and handsome form with fine dark purple labellum. W. GOODLIFFE, Esq., Worthing, showed two plants of *Oncidium Sanderianum*, with brown flowers, the yellow mottled petals of which were joined, as in *O. serratum*, and all of the segments were wavy at the edges. Also a pretty *Odontoglossum Rossi*, with lines of purple spots up the white petals. C. D. KEMP WELSH, Esq., Broadlands, Ascot (gr., Mr. Guyett), sent *Cypripedium Spicerianum* "Broadlands variety." Mrs. BRIGGS-BURY, Accrington (gr., Mr. Wilkinson), sent *Cypripedium* × (*Leeanum* × *Calypso*).

Awards of Merit.

Odontoglossum × *Fairy Queen*, from Mrs. BRIGGS-BURY, Bank House, Accrington.—A grand natural hybrid, with a strong suggestion of *O. triumphans*, especially in the labellum. The broad sepals and petals were white at the base, and yellow for the greater part of their surface, and bore showily displayed red-brown blotches. Lip white, with yellow crest, and a large brown blotch in the centre. In general appearance it resembled one of the best forms of *O.* × *Wilkeanum*.

Dendrobium Ashworthi, from ELIJAH ASHWORTH, Esq., Harefield Hall, Wilmslow (gr., Mr. Holbrook).—A very singular species of the *D. macrophyllum* class, from New Guinea. The ascending inflorescence bore large flowers, the sepals of which were greenish-white, the stalked petals pure white, and the whitish labellum curiously crumpled over the column. When opened out artificially it is said to remain more open, and probably the infolding may be less in degree when the plant is flowered in bright weather. Ovary downy.

Lycaste lasioglossa, from Messrs. B. S. WILLIAMS & SON, Holloway.—Sepals red-brown, petal pale yellow, the hairy lip also yellow with red markings. See *Gardeners' Chronicle*, January 12, p. 18.

Lælia anceps Simondsii, from H. F. SIMONDS, Esq., Beckenham (gr., Mr. G. E. Day).—A pure white form of good shape, and bearing slate-blue lines at the base of the lip, and a few small bluish spots on the front lobe.

BOTANICAL CERTIFICATE.

Epidendrum Claesianum, from M. FLORENT CLAES, Brussels.—A neat, bush-like plant, with slender, upright stems clad with stiff, dark green leaves, and bearing terminal heads of pretty, pure white flowers; the largest plant having about twenty heads. Colombia, altitude 6500 feet.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq. (Chairman), and Messrs. Geo. Relf, W. J. Empson, W. Farr, W. Bates, S. Mortimer, Alex. Dean, C. Horrin, E. Shaw Blaker, W. Poupard, H. Markham, E. Beckett, G. F. Miles, Geo. Wythes, J. Willard, Jos. Cheal, G. Norman, A. H. Pearson, H. Esling, and Rev. W. Wilks.

MESSRS. JAS. VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea, exhibited first-class fruits of a few choice varieties of Pears. The fruits were produced by pyramid trees in the open. The varieties included *Olivier des Serres*, *Easter Beurré*, *Bergamotte d'Esperen*, *Beurré Rance*, *St. Germain*, *Ne Plus Meuris*, and *Josephine de Malines* (Vote of Thanks).

Pear Beurré Rance was shown grandly from the gardens of Lord ILCHESTER, Holland House, Kensington. It is surprising that such fine fruits are possible in so urban a district (Vote of Thanks).

Fruits of *Apple Northern Spy* were shown by Mr. Camm, gr. to the Duchess of CLEVELAND, Battle Abbey. It is of American origin, and in some districts is a very good and highly-coloured dessert Apple.

Pear Catillac, the well known and probably the best culinary variety that exists, was shown well by ALFRED KAY, Esq., 14, Barrowgate Road, Chiswick (Cultural Commendation).

Award.

Pear Josephine de Malines.—This is a well known Pear, said by Hogg to have been raised by Major Esperen, of Malines, in 1830, and named in compliment to his wife. The fruits are of medium to large size, ripen about February, and under suitable conditions will remain good until April (see *Gardeners' Chronicle*, January 23, 1898, p. 52). It has capital flavour for so late a Pear, and from this point of view was valued even by the late Mr. Blackmore, at Teddington. Excellent specimens were shown by Messrs. JAS. VEITCH & SONS, Chelsea (First-class Certificate).

The Lecture.

In the absence of Professor BEACH, a paper by that gentleman upon "Recent Developments in the Treatment of Diseases and Insects injurious to Orchard Crops" was read by the Rev. W. WILKS, M.A., V.M.H., Secretary; Mr. A. DEAN, in the Chair. The writer commenced with the statement, that during the last quarter of a century more progress had been made in respect to gaining a knowledge of insect and fungoid pests, and the treatment of them by fungicides and insecticides, than in any other branch of horticultural practice. The use of Paris Green about thirty years ago marked a new era, and there were soon invented many appliances for spraying the liquid upon the plants. At that time, in the Northern States of America, there was felt very great alarm owing to the appearance there of the Colorado Potato Beetle, which wrought immense destruction upon the Potato crops. But the beetle proved to be a blessing, inasmuch as it led to the introduction from Europe of arsenical preparation known as Paris Green and

London Purple. It was soon found that these preparations could be used with excellent results against most insect foes, and its use had no sterilising effect upon the soil, neither caused much injury to the plants. The fungicide known as the Bordeaux Mixture originated from a locality near to Bordeaux, and was composed of copper-sulphate and lime. There had been used many copper preparations since for the destruction of fungi, but the original mixture had been found to be the best preventive. The Bordeaux Mixture, however, was not effective against diseases caused by bacteria, nor was it so useful as potassium sulphide against some leaf-mildews.

Professor Beach then spoke of the use of arsenical liquids, and the Bordeaux Mixture in conjunction with each other to cleanse or prevent plants from both insect and fungoid pests. There have been tried many substitutes for Paris Green, including sodium arsenite, which was cheaper, and remained longer in suspension in water. Arsenate of lead was introduced into Massachusetts to fight the Gypsy-moth. It was not so hurtful to the plants as Paris Green.

Kerosene emulsion had been employed against insects having what are called "sucking" mouths, as scale insects, aphids, &c. There were still conflicting reports upon the results of spraying orchard trees with the solutions mentioned, and the process was even now regarded by many as only in its experimental stage.

Referring to the appliances that had been invented for mixing and delivering these liquids, Professor Beach said that an exhibition of them would be as interesting as a collection of old armoury. There was one class of orchard troubles in America that still are shrouded in mystery. It includes "Peach Yellows," "Little Peaches," "Root-rot," "Crown Gall," "New York Canker," &c.

"Little Peaches" is descriptive of a condition in which the fruits do not grow to their proper size, and they are later in ripening. The only remedy at present known against these latter diseases, was to destroy such trees by fire.

In conclusion, the lecturer said, that his paper was intended as a brief résumé of the progress made in respect to the treatment of orchard-pests in the Eastern United States.

At the conclusion of the lecture, a Fellow said, that when in Canada he had found that the fruit cultivators had used copper sulphate without the lime in the winter season, when the trees were devoid of leaves.

Mr. Wilks then added, that he had not read the whole of the matter in the paper, but in a part of it Professor Beach stated that purchasers insisted that the nurserymen should submit their trees to a bath in hydro-cyanic acid gas before distributing them. At the same time, there were doubts as to its efficacy.

WARGRAVE GARDENERS'.

JANUARY 2.—A fortnightly meeting was held on the above date, at which Mr. G. Stanton, gr., of Park Place, Henley, read an excellent paper on the "Making of Salads." He described how they should and how they should not be made, including the dressing and mixing, of which English people generally understood so little. Cucumbers, Tomatoes, Endive, Chicory, Dandelion, Onions, Radishes, Celery, Cress, Lettuce, Beet-root, the Blue Potato, Chervil and Tarragon, were fully dealt with; and a long discussion took place, Mr. Stanton answering several questions put by members. Some good exhibits were staged, including a group of Calanthes, by Mr. Pope; a basket of Tomatoes, for which Mr. STANTON was awarded a Cultural Certificate; and some wonderfully large blooms of Sutton's Giant Cyclamen. *H. Coleby, Hon. Sec.*

ROYAL CALEDONIAN HORTICULTURAL.

JANUARY 9.—The annual general meeting was held at Dowell's Rooms, Edinburgh, on the above date. Mr. Neil Fraser, senior, Vice-President, was in the Chair. The Secretary, in submitting the annual report, said that at the last show there was an increase in cut flowers. The total entries at the 1899 show were 2,068, while those of the 1900 show were 2,161. An abstract of the funds of the Society as at November 30, 1900, showed the ordinary receipts to have been £1,107, and the payments £1,260. Mr. Milne remarked that he noticed the members' subscriptions were £100 less than formerly, and he thought some means of increasing the membership should be adopted.

The Chairman said that an effort to increase the number of members was to be made by sending out a circular to persons interested in gardening who were non-members. The following are the elected office-bearers:—President, Lord Balfour of Burleigh; Vice-president, Viscount Melville; Councillors, Messrs. James Fulton, Edinburgh; James Whittock, Dalkeith; and D. W. Thomson, Edinburgh.

It was agreed that gardeners, horticultural employers, and nurserymen, be admitted to membership on payment of 5s. annual subscription. *D. T. F.*

THE FRENCH HORTICULTURAL OF LONDON.

On the evening of the 12th inst. the members and friends of the above-named Society met together at the Imperial Restaurant, Strand, to celebrate the twelfth anniversary of the formation of the Society. M. LOUIS GENTIL, at one time Secretary, but who for the past three years has been holding

an important post under the Belgian Government in the Upper Congo, occupied the chair, being supported by a large company, among whom were Messrs. George Schneider, Harman Payne, T. Bevan, H. J. Jones, Percy Waterer, Gaskill, Tucker, Cutbush, E. T. Cook (*The Garden*), and others.

In introducing M. Gentil to the meeting, Mr. Schneider said that to most of them their Chairman was only known by name, although it was not so long since he was an active working member of the Society. Although in those days M. Gentil was a gardener, to-day he was a living example of what industry and perseverance might accomplish, and he hoped one that other young gardeners might imitate. M. Gentil, being on a visit to Europe, had done them the honour of presiding over their twelfth annual dinner, coming specially from Belgium to take the position, and he felt sure that everybody present would drink to his health and prosperity, and appreciate his kind interest in the Society.

M. Gentil, who was received with great applause, replied, expressing his pleasure that after a three years' absence he should return to find the Society making such progress. Much of this was due to the kind interest and devotion of their President, Mr. Schneider, to whom they were all deeply indebted in many ways. Many of their members were now dispersed over all the quarters of the globe, and he felt that young gardeners were not wanting in courage in so doing. He thought that more of them might take advantage of the opportunities offered nowadays, with the result that they might secure appointments in the colonies that would amply reward them for their self imposed expatriation. He felt much honoured at being invited to preside on this occasion, and drank very cordially to the continued prosperity of the Society.

Some statistics of the Society's work during the past year, were given by Mr. Schneider, by which it was gathered that numerically and financially there was good ground for congratulation.

Mr. Cutbush replied for the visitors, and Mr. T. Bevan pathetically contrasted the position of young English gardeners in Paris thirty years ago, with the position of young French gardeners in England here to-day. It is much to be regretted that young English gardeners on the continent have no similar society to assist them, and keep them together by means of periodical meetings. The toast of the Press was responded to by Mr. Thomas (*The Garden*). Songs and recitations filled up the remainder of what was a most enjoyable evening, and following the usual practice, the French, Belgian, and English national anthems were sung. M. Gentil, Père, presided at the piano.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

JANUARY 14.—The monthly Committee meeting of the above Society was held at the Caledonian Hotel, Adelphi Terrace, Strand, on the above date. Mr. C. H. CURTIS presided. With regard to the Secretary's salary, it was proposed by Mr. Winter, and seconded by Mr. Hudson (as a recommendation to the general meeting which was about to take place), that £70 for the year 1900 be paid him, with an annual increment of £5, till £100 be reached. This was carried by the majority. Nine new members were fully elected, and three others subject to production of birth certificates; six others were nominated. Mr. G. Moulard having received twelve months' sick pay, was granted half pay for a few weeks, until he reaches seventy years of age. A member was granted six months' subscriptions to assist him over a difficulty. The Actuary's report was produced, and ordered to be read at the next meeting. A cheque for £12 12s. was passed for the Actuary's services. The Secretary was instructed to pay Messrs. Pollett's account, and a cordial vote of thanks to the Chairman ended the meeting.

A special general meeting was also held, for the purpose of taking into consideration the recommendation of the Committee, that the Secretary's salary be adequately increased. The chair was taken by W. ROPELLE, Esq. After a few very appropriate remarks by the Chairman, it was proposed by Mr. Winter, and seconded by Mr. Hudson, that the Secretary's salary be £70 for the year ending January 14, 1901, with an annual increment of £5, till the maximum of £100 be reached. The said salary to be paid quarterly, and Rule 8 to be altered accordingly. An amendment was made by Mr. Burge, but there being no seconder, the original motion was put to the meeting (forty-seven members being present), and carried unanimously. A hearty vote of thanks to the Chairman ended the meeting. *W. Collins, Secretary.*

GRAND YORKSHIRE GALA.

The annual meeting of the guarantors and life members of the Grand Yorkshire Gala was held recently in Harker's Hotel, York. Alderman BORDER presided over a large attendance.

The chairman having apologised for the absence of Ald. Sir Christopher Milward (the chairman), said that they were met together at the commencement of a new century to inaugurate the Gala for the ensuing year. It was well known to them that it will be the Forty-third Gala, and it was proposed to hold it on June 12, 13, and 14. Personally, he knew of nothing this year which was at all likely to detract from the influence of the Gala like that which was unfortunately the case last year. They never had a better display of fruit, flowers, and horticultural products than last year, but circumstances were against them, and they unfortunately left off with a deficit. He felt that it was the wish

of all that the first Gala of the present century should be an unqualified success, and he was sure that all present would do their utmost to maintain its prestige, and help it to continue the good work which the Society had done in York for forty-three years. He proposed that the Lord Mayor (Alderman E. W. Purnell) be elected president for the ensuing year.

Mr. J. J. Hunt seconded the proposition, which was unanimously carried.

The Lord Mayor said that he esteemed very much the honour that they had done him in asking him to be president of the Grand Yorkshire Gala for the ensuing year. He felt that he was following in the footsteps of other Lord Mayors, and he viewed the position as one of great honour, for a high standard had been set up, which it would be his earnest endeavour to reach. He would do his best to forward the interests of the Gala, and he trusted that when the year was up he would meet with their approval.

The Chairman moved that Sir Christopher Milward be re-elected chairman, which was seconded by Mr. M. Cooper, and carried, *nem dis.*

Ald. Border was unanimously re-elected vice-chairman; Ald. Sir J. Sykes Rymer as treasurer, and Mr. C. W. Simmons was re-elected as secretary. The Council was unanimously re-elected, with the addition of Mr. E. Bushell.

The following sums were allocated for the forthcoming gala:—£650 for the floral fête, £230 for the musical arrangements, £120 for fireworks, £85 for balloon expenses, and £175 for amusements. The various committees were then appointed.



METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period January 6 to January 12, 1901. Height above sea-level 24 feet.

1901.		DIRECTION OF WIND.	TEMPERATURE OF THE AIR.				TEMPERATURE OF THE SOIL AT 9 A.M.				RAINFALL.	LOWEST TEMPERATURE ON GRASS.
JANUARY 6 TO JANUARY 12.	At 9 A.M.		DAY.	NIGHT.	At 1-foot deep.	At 2-foot deep.	At 4-foot deep.					
	Dry Bulb.							Wet Bulb.	Highest.	Lowest.		
SUN. 6	E.N.E.	deg.	deg.	deg.	deg.	ins.	deg.	deg.	deg.	deg.		
MON. 7	E.N.E.	31.0	29.8	31.5	27.2	0.07	38.9	43.8	47.5	24.5		
TUES. 8	E.S.E.	30.0	29.2	35.0	26.5	0.12	37.3	42.5	46.9	21.1		
WED. 9	E.N.E.	31.2	30.0	43.0	27.4	...	37.3	42.0	46.7	24.7		
THU. 10	E.S.E.	30.2	28.7	50.3	31.2	...	38.1	41.8	46.5	28.1		
FRI. 11	E.S.E.	41.4	40.6	46.3	30.5	0.07	39.1	42.0	46.2	29.2		
SAT. 12	E.N.E.	38.4	38.1	43.1	38.1	...	40.6	42.3	46.2	36.2		
MEANS...	...	34.1	33.6	40.0	31.1	0.33	38.4	42.5	46.8	27.2		

Remarks.—Snow fell during the first part of the week to the depth of 2½ inches, which soon disappeared as the weather became milder. The latter part of the week was remarkable for black fogs.

GENERAL OBSERVATIONS.

The following summary record of the weather throughout the British Islands, for the week ending January 12, is furnished from the Meteorological Office:—

"The weather was very cold and wintry during the earlier half of the period, with rather considerable falls of snow in many parts of Great Britain. The latter days of the week, however, were milder, and heavy rain was experienced in the south of Ireland, and eight falls at most of the English and Scotch stations.

"The temperature was below the mean in all districts, the deficit ranging from 1° in Scotland, N., to 5° in the Midland Counties and England, S.W. The highest of the maxima were registered on the 12th, and varied from 52° in Ireland, S. and the Channel Islands, and 51° in England, S., to 44° in Scotland, E. The lowest of the minima were recorded on the 9th. They were low generally, ranging in most cases from 16° in Scotland, E., to 23° in the Channel Islands. At Southampton and Westbourne (Emsworth), however, the thermometer fell to 13°, while at Swaraton (Alresford) the very exceptional reading of 2° below zero was recorded. The mean temperature for the week over the Kingdom generally was much lower than at any other time during the present winter.

"The rainfall exceeded the mean in Ireland, S., and the Channel Islands, but was less than the normal in all other parts of the Kingdom. In Scotland, N., and England, E., the fall was very small.

"The bright sunshine was deficient in most districts especially over the north-eastern parts of Great Britain. The

percentage of the possible duration ranged from 24 in England; S.W., and 22 in England, S., and the Channel Islands, to 8 in Scotland, W., 5 in Scotland, E., and to 1 in England, N.E."

THE WEATHER IN WEST HERTS.

The recent cold spell lasted scarcely a week. On the closing night of it, a thermometer exposed on the surface of the snow showed 15° of frost, which is the greatest cold as yet experienced here this winter. The thaw which set in on the following day was one of the most rapid I ever remember—indeed, the snow seemed to disappear as if by magic. On the evening of the 8th it covered the ground to the depth of 5 inches, by the next evening it had shrunk to 2 inches, and on the following morning scarcely any snow at all was to be seen. At the present time the soil at 2 feet deep is about 1° warmer than is seasonable, but at 1 foot deep the reading is slightly below the January mean. No rain fell, but during the week 1½ gallons of water came through both percolation-gauges. Six of the last eight days were altogether sunless, and on four of them the air remained very nearly saturated with moisture. The 11th proved even a calmer day than the 4th—the total record of air-movement for the twenty-four hours amounting to only 3 miles—making this the calmest day experienced here since January 13, 1898. *E. M., Berkhamsted, January 15, 1901.*

CATALOGUES RECEIVED.

SEEDS, BULBS, ETC.

JOHN WOOD, Corn Market, Penrith.
EDMONDSON BROTHERS, 10, Dame Street, Dublin.
W. CUTBUSH & SON, Highgate, Barnet, and 54, Bishopsgate Within.—Also new Chrysanthemums.
TILLEY BROS., 133, London Road, Brighton.
ROBERT VEITCH & SONS, 54, High Street, Exeter.
DICKSONS & CO., 1, Waterloo Place, Edinburgh.
HAAGE & SCHMIDT, Erfurt, Germany.
TUGOOD & SONS, Southampton.
ALBERT F. UINSTONE, 35, Church Street, Rotherham.
B. S. WILLIAMS & SON, Victoria and Paradise Nurseries, Upper Holloway, London, N.
FIDLER & SONS, Reading, Berks.
F. URQUHART & CO., 11, Union Street, Inverness, N.B.
W. DRUMMOND & SONS, Ltd., Stirling, N.B.
J. R. PEARSON & SONS, Chilwell Nurseries, Lowdham.
WILLIAM BULL, 53½, King's Road, Chelsea, London.
ARTHUR W. WADE, Riverside Nursery, 7, North Station Road, Colchester.
BROWN & WILSON, 10, Market Place, Manchester.
BARR & SONS, 11, 12, and 13, King Street, Covent Garden, London.
R. & J. FARQUHAR & CO., 6 and 7, South Market Street, Boston, Mass.
WILLIAM WAIT, Cupar and Perth, N.B.
W. SMITH & SON, Exchange Seed Warehouse, Aberdeen.
WM. BAYLOR HARTLAND, Royal Seed Warehouse, Cork, Ireland.
CLARK, BROS. & CO., 65, Scotch Street, Carlisle.
WILLIAM FELL & CO., Royal Seed Establishment, Hexham.
HARD BROS., Penrith.
FRIEDR. C. POMENKE, Strausse, 42-46, Altona, Hamburg.
HOBBS LIMITED (JOHN GREEN), Dereham, Norfolk.

CHRYSANTHEMUMS.

W. J. GODFREY, The Nurseries, Exmouth, Devon.
W. J. WELLS & CO., LTD., Earlswood Nurseries, Earlswood, Redhill, Surrey.—Supplement to Catalogue, including large sheet with fourteen photographs of new varieties.

CANNAS, ETC.

CROZY, AINÉ, FILS & CIE., Hyères, France.

MISCELLANEOUS.

DOBBS & CO., Rothesay, N.B., and Orpington, Kent—Seeds and Plants, General Nursery Stock.
PAUL CANARD, Realejo Alto, Sainte Croix, Tenerife Isles, Canaries—Seeds from the Canary Isles.
HAAGE & SCHMIDT, Erfurt, Germany—Garden Seeds and Plants.

ANSWERS TO CORRESPONDENTS.

ADDRESS AND NAME: If *Goodfellowship*, who sent a communication upon horticulture in the Isle of Wight, will kindly furnish us with his name in full and present address, not necessarily for publication, but as an earnest of his *bona fides*, his letter will be inserted in these pages.

BOOKS: *Rati-bon*. The books have a certain value. Why not advertise them in this journal? *The Greenhouse Companion*, by W. J. Hooker, is rarely met with. The other, by Dr. C. M. Cooke, is a standard work.—*The Orchid Review*. A. Y. This serial is published by Marshall Brothers, Keswick House, 1, Paternoster Row, London, E.C., at 1s. per month.

DISCHARGE OF SAP FROM HORSE-CHESTNUT TREES: T. M. We know of no remedy. The Horse-

Chestnut is very liable to this malady when pollarded, or limbs are torn off by the wind, which however seldom happens. To remove a limb with the saw is almost sure to cause a discharge. Fungus next week.

EEL-WORMS: A. D. We fear you do not read your *Gardeners' Chronicle* with much attention, for methods of ridding plants (not houses), or, rather, of not introducing eel-worms in the soil used in potting plants, have been given quite lately. See p. 468 in our issue for December 22, 1900, under GARDENIAS.

FELLOWSHIP IN THE ROYAL HORTICULTURAL SOCIETY: W. S. N. That he or she should be interested in horticulture is enough to make him or her eligible for election as a Fellow. Candidates are proposed by two Fellows, and forms for proposing new Fellows may be obtained from the office, 117, Victoria Street, Westminster. The subscriptions are either four guineas, two guineas, or one guinea, and Associates 10s. 6d. per year.

GRAFTING CLEMATIS: A. R. S. Clay will do to cover the union if it be well made in the ordinary manner. Bottom-heat of 70° to 75° is essential, also a close case, standing within a house having a temperature of 60°.

HEAD AND SECOND GARDENER: Law. Although these servants are classed as domestics for taxation purposes, and in the eyes of the law, an employer may not so regard them when making testamentary bequests. It is usual to specify them in a will. You should get legal opinion on the matter.

MANURE FOR VINES AND PEACHES: J. B. The chief constituents of manure for Vines should be of a durable nature, such as lime in the form of ground bones, and half-inch bones and mortar rubble, and horn shavings. Stable and farmyard manure in any quantity should not be incorporated with the soil, but they may be used as mulches in the spring and summer on soils apt to dry out largely. Liquid-manure applied to the border in the winter and a few times during growth does good to aged Vines or Vines in restricted borders. The same substances may be used for the Peach-trees, together with two or three dressings annually in the summer of potash, as muriate, at the rate of 4 oz. to the square yard.

MISSING INDICES: R. M., *Verrières le Buisson*. The numbers containing the indices will be sent on payment of the sum of 8d. Write to the Publisher.

MUSHROOM BED: *Ignorant*. Being quite inexperienced in the cultivation of Mushrooms, you should obtain *Mushrooms for the Million*, by J. Wright, and sold at the office of the *Journal of Horticulture*, 12, Mitre Court Chambers, Fleet Street, London, E.C.

NAMES OF FRUITS: O. L. 1, Smart's Prince Arthur; 2, Norfolk Stone Pippin; 3, Ord's Apple; 4, Unknown; 5, Rhode Island Greening; 6, Harvey's Pippin.—T. V. All small examples, 1, Holland Pippin; 2, Horsham Russet; 3, Selwood's Reinette.—J. C. W. The old Winter Pearmain, or Duck's Bill of Kent; it is not the Golden Winter Pearmain, which is commonly known as the King of the Pippins.—*Coutances*. 1, Esopus Spitzenburgh; 2, Ashmead's Kernel.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—J. Broom. An *Alpinia*, or a *Girgerwort*, but we cannot identify it, unless flowers are sent.—J. E. Hawkins. 1, Form of the common Yew, *Taxus baccata*; 2, *Cupressus Lawsoniana*; 3, *Abies Nordmanniana*; 4, *Juniperus sinensis*; 5, probably the *Deodar*, *Cedrus Deodara*; 6, the Douglas Fir; 7, *Thuja orientalis*, variety of; 8, *Cupressus Nootkatensis*, sometimes called *Thuiopsis borealis*.—*Constant Reader*. 1 and 2, *Cupressus Lawsoniana*; 3, *Cupressus Nootkatensis*, alias *Thuiopsis borealis*; 4, *Thuja gigantea*, the T. Lobbi of gardens; 5 and 6, varieties of *Thuja orientalis*.—*Subscriber*. 1, *Guzmania picta*; 2, without number, *Cœlogyne flaccida*; 3, *Cœlogyne cristata*; 4, *Asplenium Belangeri*.—R. W. R. Thanks for sending flower of *Cypripedium*. The one formerly sent seems to be the better of the two.—F. H. A. The flowers are of typical *Cypripedium insigne*. They show interesting variation, but neither of

them is specially remarkable.—B. B. *Lasiandra macrantha*.—T. N. *Dendrobium aureum*, syn. *heterocarpum*.

PEACH-HOUSE: S. G. R. & Son. Plant the trees at 15 feet apart; fix the wire or iron-rod trellis at 1½ to 2 feet from the roof, and the wires or rods at not more than 6 inches apart. In order to make the utmost use of the trellis, trees with stems 5 to 6 feet high may be planted between the fan-trained trees, removing them when the latter encroach upon them.

PELARGONIUM CUTTINGS: Downfield. Inserted twice as deep as is necessary, and the soil kept too moist.

PLUMBAGO CAPENSIS: W. C. The composition and condition of the soil of the border sent for our inspection is very unsuitable and bad. The drainage must be wrong, or a nuisance is being committed. The soil for this plant should consist chiefly of turfy loam, to which peat, leaf-soil, and silver-sand should be added, the last-named in greater or lesser quantity accordingly as the loam is heavy or light. A depth of 1½ to 2 feet would suffice, and it should be drained by having 6 inches of broken bricks or similar hard material put in the bottom, with an outlet at the lower end for the water. The stove is not a suitable structure for a greenhouse plant, as is *Plumbago capensis*. It will do well out-of-doors in beds and pots, from June to October in the southern parts of the kingdom.

QUANTITY OF COAL REQUIRED FOR FORCING-HOUSES, CONSERVATORY, &c.: E. C. Without knowing the cubic contents of the houses, their shapes, aspect, and amount of shelter they enjoy, we can only give you an approximate estimate of the quantity of anthracite coal that would be required to heat them efficiently. Large vinery and small one attached, if forced early, 2 cwt. per day for three months, and half that quantity for two and a half months = 13 tons 8 cwt. Small early vinery and small Orchid-house, 6 tons 14 cwt.; Peach-house and forcing-house, 9 tons 2 cwt. for three months, and for two months longer, 5 tons. Conservatory, 10 cwt. a week for twenty weeks = 10 tons altogether. According to this calculation you need about 44 tons of coal, which quantity is 4 tons in excess of that consumed, and we should suppose, therefore, that your gardener is not extravagant in the matter of fuel.

STRAWBERRY: D. D. C. Not an unusual condition.

"THE DEGREE" OF F.L.S., F.R.H.S., AND F.R.S.: *Monte Christo*. You need have no knowledge of botany or gardening to become a Fellow of the two first societies. All you require is a certificate from two or three of the existing Fellows to show that you are a fit person to be added to the list. Your election would then be proposed at one of the meetings of the society, and in all probability you would be duly elected if you pay the fees. For the Royal Society it is quite a different matter: only fifteen persons are elected each year, and they must have more or less distinguished themselves in some branch of science. No money payment is sufficient to ensure entry.

TULIPS FAILING TO GROW OR FLOWER PROPERLY: F. S. You must send us some bulbs, soil, &c., before we can tell you what is the matter with the bulbs. As you have no experience of forcing, you have probably made mistakes in your treatment of them. A small Manual on bulb cultivation is published at the Bazaar office, 170, Strand, W.C.

UNDER-GROWTH IN A WOOD: F. G. B. Cut the bushes to the ground-level, and constantly destroy the new growth whilst in a soft green state. This will greatly weaken the plants, and many will die out in a few years. Small bushes may be cut off below the surface with a mattock; or lifted out bodily with hooked clips, and a long piece of stout timber mounted on a strong trestle and used as a lever.

COMMUNICATIONS RECEIVED.—J. W. McHattie—J. McCall—W. Hazell—*Bolton Chronicle*, reporting staff.—T. M.—W. F. G.—A. S.—H. G.—C. K.—M. W.—S. McD.—R. D.—H. W.—D. T. F.—J. D.—J. B. Swanley.—T. Elkes.—W. A. C.—C. H. W.—J. J. W.—H. W. W.—M. M. R., Nice.

(For Markets, see p. x.)

SUPPLEMENT TO THE "GARDENERS' CHRONICLE," JANUARY 19, 1901.



CORDYLINE INDIVISA FLOWERING IN THE OPEN AIR IN THE GARDEN OF DR. HAMILTON RAMSAY, TORQUAY.



THE

Gardeners' Chronicle

No. 735.—SATURDAY, JAN. 26, 1901.

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HYBRIDISATION IN AMARYLLIDÆ.

(Continued from p. 38.)

IN dealing with these earliest alleged hybrids figured by Mrs. Bury, attention should be drawn to the fact that the Liverpool Botanic Gardens, where many of the plants were drawn, gave, at that period, unrivalled facilities for studying the subject with which I am dealing.

A Mr. Harrison, a native of Liverpool, but living in Brazil, was then sending home many species of *Hippeastrum*, mostly of great beauty, and all of them new to cultivation, to his friends and relatives in Liverpool.

As, in those days, few private individuals possessed efficiently-heated structures to grow such plants in, the botanic gardens became the recipients of most, if not of all, of these importations. Hence, it was here, under the care of Messrs. Shepherd, that a great opportunity occurred for the hybridisation of these plants. To begin with Johnsoni, we are at once plunged into a sea of doubt and speculation. Mr. Baker says that Johnson was a watchmaker of Prescott, in Lancashire, when he effected the first hybridisation in 1799; but Mrs. Loudon, in 1841, writes that he was "a person named Johnson who had a small garden at Mitcham in 1810;" no other information was apparently forthcoming about him at that date. Mrs. Bury's figure was certainly drawn prior to 1830, yet she evidently felt that she was treading on dubious ground, for she says—

"The prototype is said to have been first raised about the year 1799, from the seed of vittata impregnated with formosissima, by Mr. Johnson . . . and the present specimen is from one of the original bulbs, presented by Mr. Johnson to the late E. Falkner, Esq., of Fairfield, near Liverpool."

At least she felt certain that this plant that she was drawing was indubitably the Johnsoni of Johnson himself. It bears a seven or eight-flowered scape, and is of a dark self crimson, banded to the apices of the segments, with a narrow, sharply defined, deep red keel, turning suddenly to whitish-green in the lower third.

The plant called Johnsoni nowadays is an entirely different thing; it has three or four flowers, is of a light brick-red colour, with a lighter-coloured (or white) keel in the lower two thirds, as described in Nicholson's *Dictionary of Gardening*. He only claims that it was one of the earliest hybrids. Only once have I seen the Johnsoni of Johnson alive, and that was about a dozen years ago, in the collection of the late Mr. James Backhouse, of York. I believe that the plant is now extinct. As to its parentage, formosissima, as we know the name, and as it is figured in Bury's work, belongs to the genus *Sprekelia*, which will not fertilise the stigma of any true *Hippeastrum* (so far as very extensive experiments teach me; Dr. Bonavia has reached the same conclusion as the result of his experiments). Secondly, there is no resemblance whatever to *Sprekelia* in the alleged offspring. The alleged female parent, vittata, is one that I have never succeeded in hybridising, nor does Johnsoni bear any resemblance whatever to vittata.

Hence, I think we may dismiss the supposed parentage of Johnsoni as pure guess-work—and bad at that. It might pass as a hybrid between "equestre," and some form of the rutilum-reginæ group, or it might be simply a seedling of some variety of the latter group.

Mrs. Bury notes "a fringed nectary in the throat," and this is especially remarkable in "equestre major," and in a less degree of some rutilum-reginæ forms, such as sub-barbatum (*Bot. Mag.*, 2475). The facts, as they are presented by Mrs. Bury, would not lead me to class Johnsoni as a true hybrid, much less as one of ascertained parentage.

Mrs. Bury notes that "many learned disputes" had arisen on the subject, and that "many seedlings from reginæ and others have obtained the appellation of Johnsonian." We are referred to the writings of Herbert, Gowen, and Lindley, for further information. Mr. Baker states that Johnsoni was raised out of reginæ by vittatum.

To proceed with Mrs. Bury's hybrids. The beautiful and distinct white form called "picta," I have never seen alive. Had a hybrid origin been claimed for it, no one could have controverted the statement. But no claim to hybridisation is put forward by Mrs. Bury. In figure 7, however, a very lovely unnamed seedling is figured (white, edged pink), raised out of solandriiflorum by Johnsoni. It is a pity that such a charming and distinct form should so soon die out of cultivation, for there does not appear to be any subsequent record of this seedling or hybrid. Not improbably it was a mule, in which case it would die out in about five or six years, the average length of family-life of solandriiflora under cultivation in England.

The reverse cross is also given in fig. 46, showing a fine crimson flower with white star, and long tapering apices to the segments. I have seen nothing like this alive. If Johnsoni was not a hybrid, then these two beautiful seedlings were specific hybrids, and not improbably mules. Mr. Baker, in his invaluable *Handbook of the Amaryllidaceæ*, pp. 47, 52, 53, gives a mass of information about the earlier and subsequent hybrids and mongrels.

H. Griffin, of the *Botanical Magazine*, 3528, is cited as a hybrid between psittacina and

Johnsoni. Certainly the figure is not typical of psittacina, and the plant is not improbably a hybrid. Yet it cannot be said that its parentage is undoubted, because it appears (in the letterpress) that it was raised by "W. Griffin in his hothouse at S. Lambeth previous to 1820," and did not flower till after sixteen years or more had elapsed. Seedlings usually flower in from eighteen months to four years from date of sowing, and in sixteen years or more there was certainly time for many things to happen.

Any attempt to follow out the 100 alleged hybrids named in Sweet's *British Flower Garden* in 1830, or those dealt with by the other authors referred to by Mr. Baker, cannot be made within the limits of this article. But with regard to those for which hybrid origin is claimed, mentioned in Mr. Baker's work, I would remark that I have received direct from different parts of South America plants indistinguishable from those figured in *Redouté*, 469 (Brasiliensis), and by Loddiges in *Botanical Cabinet*, 159 (spectabile), for which Loddiges raised no claim to hybrid origin. Mr. Baker has also included among alleged hybrids, plants such as ambiguum of *Botanical Magazine*, 3542, and Harrisoni of *Bury*, 27, of which latter Mrs. Bury distinctly states that it was imported from Peru and flowered for the first time in 1824. (*Vide also Nicholson in Dictionary of Gardening.*)

It may perhaps be claimed fifty years hence that the alleged new species, H. Arechaveletie, is a hybrid, because it resembles some such alleged hybrid of the early years of last century. Some of the hybrids, or mongrel-bred plants, mentioned by him I have, or have had, alive in my collection—such as "Carnarvonian."

Mr. James O'Brien figured in the *Garden* of July 12, 1879, the fine hybrid "O'Brieni," raised out of pardinum by reticulata, but this also seems to have proved a mule, and died out in due course.

M. Van Houtte also figured in his *Fl. des Serres*, 1277, an alleged hybrid between reticulata and vittata, but I have no information as to whether the parentage of this plant was ascertained beyond doubt. There seems nothing improbable in the parentage from the figure.

Sir Charles Strickland, Bart., informs me of a hybrid between alicum and calyptratum which he has in cultivation. This extremely interesting plant should certainly be figured and put on record. I have visited the districts where both species grow in close proximity, although I never found them intermingled. Both species are prolific in varieties, but I found no trace of any intermediate forms, such as might be reasonably supposed to be natural hybrids, between them.

The following give some notable plants belonging to this genus, for which a hybrid origin has been claimed:—Ackermannii pulcherrima (alium × Johnsoni), Garaway, Bristol, 1850; splendidum (vittatum × reginæ, or equestre), Herbert (*Bot. Reg. App.*, 1824); Johnsoni II. (vittatum × reginæ), Gowen, Highclere; Acramanii (alium × psittacinum), Garaway, Bristol, 1835.

I have put II. after Johnsoni, to distinguish it from the Johnsoni of Johnson. A. Worsley.

(To be continued.)

NEW OR NOTEWORTHY PLANTS.

LÆLIO-CATTELEYA × DIOGENES.

A VERY quaint-looking hybrid of the same floral value and proportions as L. C. × intermedio-flava, raised by Messrs. Charlesworth & Co., Heaton, Bradford, between Lælia cinnabarina ♀ and Cattleya Leopoldi. The inflorescence carries three flowers on an elongated scape. The upper sepal is $\frac{1}{4}$ inch long, and $\frac{1}{4}$ inch wide; the lower ones are rather shorter, and curved towards each other at the tips. Petals narrower than the sepals, and slightly wavy at the edge. Both sepals and petals

are of a reddish-orange, spotted with purple-brown. The lip, which is narrow, has the side-lobes folded over the column, yellowish-white, tipped with rose-purple. Front-lobe on a well-defined isthmus, rose-purple; the rounded front-lobe but little wider than the tube formed by the side-lobes. The inflorescence, which, on the plant gaining strength, will have more flowers, was sent by Reginald Young, Esq., Sefton Park, Liverpool (gr., Mr. Poynter). J. O'B.

CHAMÆDorea GLAUCIFOLIA.

There are amongst the Chamædoreas a good many fine stove plants worth cultivating, as they grow quickly, and are elegant in habit. It is a pity that so few of them are in general cultivation. They are found usually only in the large collections of Palms in botanical gardens. One of the rarest species is Chamædorea glaucifolia, of which there are some very fine specimens at Herrenhausen. This species differs in habit from other Chamædoreas; indeed, it more nearly resembles a Cocos plumosa, with this difference—that it is generally smaller. The leaf-stalks are more or less erect, the small pinnules about a quarter of an inch broad, but very long, and, what is curious in a Chamædorea, turning in different directions, so that the head of a plant resembles a green fountain. As the specific name indicates, the leaf of this species is glaucous, as is that of almost if not quite all the Chamædoreas in their first youth, when the primary sheathing leaves grow out of these seeds. The young plants are exceedingly elegant. There is perhaps only one Chamædorea more graceful, but unfortunately it is not yet known in cultivation—the true Chamædorea graminifolia. I know only herbarium specimens of it, the leaves of which bear very much resemblance to those of a large Cocos Weddelliana. The inflorescence of this species is very fine; the single branches of the much-branched inflorescence are not thicker than a horse's tail, and are about 3 inches long. It is to be hoped that this species will be introduced into cultivation ere long. Dr. Dammer.

SOPHRO-LÆLIA × VALDA (SOPHRONITIS GRANDIFLORA × LÆLIA HARPOPHYLLA).

In form of flower this interesting hybrid, raised by Messrs. Jas. Veitch & Sons, closely resembles Lælia harpophylla, excepting that the flowers are larger. The flower is entirely of a light orange-yellow tint, without a trace of the markings found on the labellum of Sophronitis grandiflora; the three-lobed lip is shaped like that of Lælia harpophylla, having the same narrow, elongated, crimped front lobe. Its uniform bright colour and the production of its flowers in winter will make it an acceptable plant to those who favour Orchids of small growth. J. O'B.

ORCHID NOTES AND GLEANINGS.

HYBRID CYPRIPEDIUMS.

M. DUVAL, in a recent number of the *Journal of the National Horticultural Society of France*, expresses the opinion that in hybrid Cypripediums the pollen-parent is the most influential as regards the colour of the flower; whilst the female plant especially determines the habit and the general appearance.

ODONTOGLOSSUM × LEPIDUM.

A flower of this little-known plant—a natural hybrid, described by Reichenbach in *Gardeners' Chronicle*, October 27, 1883, p. 526—is kindly sent by Messrs. Charlesworth & Co., Heaton, Bradford. It is a pretty variety, comparable in size and general appearance to O. × elegantius, which it also resembles in the inflorescence being more slender than most others of its class. The sepals and petals are of equal size, the sepals a pale yellow tint, with two large red-brown blotches on each. The petals are white at the base and yellow on the margin and apical half; each bears one large red-

brown blotch in the middle, and several smaller ones at the base. The column and lip are suggestive of either O. Wallisii or O. Lindleyanum. It is white at the base, which is enlarged on each side of the callus, and yellow in front, with a brown blotch in the centre and some smaller ones above the callus. The flower sent is said to be from a portion of the type plant.

THE DELL, STAINES.

It is in the winter that the floral beauties of Orchids appear to the best advantage, and nowhere better than in Baron Schroder's fine collection at The Dell. The Odontoglossums, of which there is a large and fine collection, seem to be more or less in flower always, especially the O. crispum varieties. In spring, the greater number appear, but at the present date there are some of the handsome blotched forms in bloom, among which were noted O. c. Princess Christian, milk-white, blotched with claret colour; O. c. Sanderianum, the greater part of whose finely-formed flower is of a dark rose-purple colour; similar, but even more rich in its tints, is O. c. Baroness Schroder—and other fine, spotted forms are showing flower. Among the hybrids in flower, is the canary-yellow variety which Reichenbach named O. × Vuylstekeanum, but which differs from that plant, and from all others; O. × Wilckeanum Godefroyæ, which is a very handsome flower, but quite distinct from other Wilckeanums; some showy forms of O. × Andersonianum and O. × Ruckerianum, and among the species O. nevadense, O. pulchellum, O. Pescatorei, and others.

In the principal Odontoglossum-house there are some good O. crispums in flower, and with stout spikes maturing O. Edwardi, O. ramosissimum, with which are associated its little-known allies, O. ioplocon and O. liliflorum; Oncidium macranthum, and other species of the cold-house. Overhead are suspended a number of finely-flowered Sophronitis grandiflora, the largest of which, with twenty-one flowers, having been for many years in The Dell collection, and previously in that of the late Mr. Day. It forms a striking example that even Orchids of small growth may be increased in vigour under cultivation. A stout plant of Odontoglossum coronarium brevifolium, also suspended from the roof, was sending up a strong spike. The plants of Lælia anceps have made a fine show for some time past, though during the recent fogs, some of them lasted but for a short period of time. Some of the best which are now in flower are Lælia anceps Ballantianiana, L. a. Amesiana, and L. a. Amesiana Crawshayana, all three being of the same class, but the variety Crawshayana is by far the best; L. a. Schroderæ, one of the brightest in colour; L. a. striata, a rare variety with striped flowers; L. a. Schroderiana, the finest white; L. a. Dawsoni, and L. a. Sanderiana, of the same class; L. a. Stella, a good white, and most profuse in flowering; and a number of others, both white and coloured, make a very fine display.

The Cypripediums, both hybrids and species, in the different houses made a very interesting display, the hybrids predominating. The plants of the remarkable C. Stonei platytanum are always objects of interest, and it is pleasant to note that they are in fine condition. In flower in one house was a number of selected varieties of Cypripedium insigne, including the Harefield Hall variety, which is the largest and best of the coloured varieties; and C. i. Sanderæ, which has been here among others appears to be still the best of the clear yellow and white varieties. In the same house are some very finely-coloured C. × calurum, C. × Sedeni, and others of the Selenipedium section; and in the stove, C. × Mrs. Chas. Canham, C. × Harrisianum superbum, C. × ænanthum superbum, C. × Læanum splendens, with seventeen flowers; and others of the older hybrids, each with a number of flowers, and which seem to gain by comparison with some of the more recent productions. In flower with these are plants of C. × nitens varieties; C. × Lathamianum, C. × euryandrum, C. × Morganie,

a fine C. × Sallieri aureum, C. Haynaldianum, C. × Pitcherianum, Williams' variety, with several flowers showing remarkable variation in degree towards one or other of the parents; C. × Milo grande, still constant to the peculiarity of having enlarged divergent lower sepals; C. × Læanum princeps and C. × L. grandiflorum, two of the best; C. × Galatea, C. × gigas, C. × Calypso, and a number of others, including some new crosses raised at The Dell, of which the C. × (ænanthum superbum × villosum aureum) is a fine dark coloured flower and distinct. Species difficult to cultivate are more than usually interesting when seen to be thriving. On several occasions we have remarked on the large specimen of Dendrobium Lowii, which has thriven for many years in the Nepenthes-house at The Dell, increasing in vigour and forming what might almost be called a bush. The rather delicate Ceylon D. McCarthae thrives in the same house; and in the warm stove-house the unique collection of albinos of D. superbum, including D. s. Dearei, D. s. Burkei, and D. s. Huttoni, show satisfactory condition. Among other Dendrobiums in flower is a new and fine form of D. × Læanum, with pretty dark rose coloured flowers. D. bigibbum, D. Johnsoniæ, and the spring flowering Burmese species, are showing well for flower.

Lælias and Cattleyas.—In the large Cattleya-house but few plants are in bloom, the chief of which are three pretty plants of Cattleya × Marster-soniæ, some Lælia × Euterpe, Lælia-Cattleya × Cassiope, and a few other hybrids, among which Lælia × flammea shows up effectively, and Sophrocattleya × Queen-Empress bears fine crimson-tinted orange flowers, surpassing all others of its class. Mr H. Ballantine, and his next in command, Mr. Clark, keep every part of the establishment up to the best standard, and in all departments there is a cheerful display of flowers, and evidence of good culture.

Among other Orchids noted were a fine batch of Calanthes, of which C. × Baron Schroder, raised on the place, is much the finest; some bright looking Masdevallias, an effective group of the rose-pink Phaios-Calanthe × Sedeniana rosea, several plants of the rare Miltonia Eudresii (Odontoglossum Warscewiczii) in bud, a number of the fine old form of Zygopetalum Mackayi in flower, a very large form of Epidendrum Wallisii, Lælia præstans in flower, and a number of Lælia Jongheana, and L. pumila, making up well for bloom; Cattleya Luddemanniana, with several fine flowers, one of the finest of the C. labiata section, but not usually so free to flower as is the case here.

In the houses of decorative plants, one side of a house is filled with the graceful Euphorbia jacquiniæflora, grown as it used to be grown for market; a fine lot of Euphorbia (Poinsettias) pulcherrima, the remains of what had been a fine display of Chrysanthemums, and of other admirably grown showy plants. J. O'B.

SEQUOIA (WELLINGTONIA) GIGANTEA.

THE remarks of Mr. Elwes and Mr. Reader on this Conifer are interesting, but would lead one to suppose that cones of it were produced in this country very scantily. Such, however, is not the case at Orton Longueville. About 300 trees, raised on the place between the years 1853 and 1860, were planted about the grounds. The late Marquis of Huntly was a great arboriculturist, and planted numerous Conifers. When the young Sequoias were large enough, an avenue 700 yards long, which runs due east and west, was formed in 1860, 150 trees being required in the planting. These trees are not all of the same height, but most of them are from 60 to 80 feet high. The size of the trunks varies, the circumference of the largest ones near the ground-level being nearly 20 feet, while others measure not more than 12 feet. Some of the trees produce cones by hundreds, and on looking at a tree the other day of about 80 feet in height, I counted forty of them on a piece of a branch about

15 inches in length, at about 12 feet from the ground; while on another branch in proximity to this one there were fifty cones, and the branches near the summit on the sunny side of the tree were loaded with cones. There must be several thousands on this one tree alone. On other trees scarcely a cone could be seen. The trees that cone most abundantly also produce plenty of male catkins. The best bunch of cones I have seen was one obtained in the autumn of 1891, the bunch having been situate at the end of a branch about 50 feet

P. Pinaster, *P. muricata*, and others; while the Silver Firs were heavily cropped, such as *Abies grandis*, *A. nobilis*, *A. magnifica*, *A. cephalonica*, *A. lasiocarpa*, *A. Pinsapo*, *A. Nordmanniana*, and *A. pectinata*. *Cedrus atlantica* and *C. Libani* had abundance of cones, whereas *C. Deodara* was bare of cones that year. The latter species cones but seldom. Other Conifers that had an abundance of cones were *Torreya myristica*, *Libocedrus decurrens*, *Thuja gigantea*, *Capressus macrocarpa*, *C. Lawsoni*, and *Juniperus excelsa*.

here, was walking with me in the avenue admiring the trees, when underneath a good specimen he stopped to examine a small fungus growing up between the decaying leaves; and at the same time he picked up a few cones that had fallen just previously, and appeared old and brown in colour, but still contained a quantity of seed. Some of the seeds were shaken out, and at his suggestion I sowed them in pots, but nothing ever came up. On three subsequent occasions I have sown seed, but with the same result.

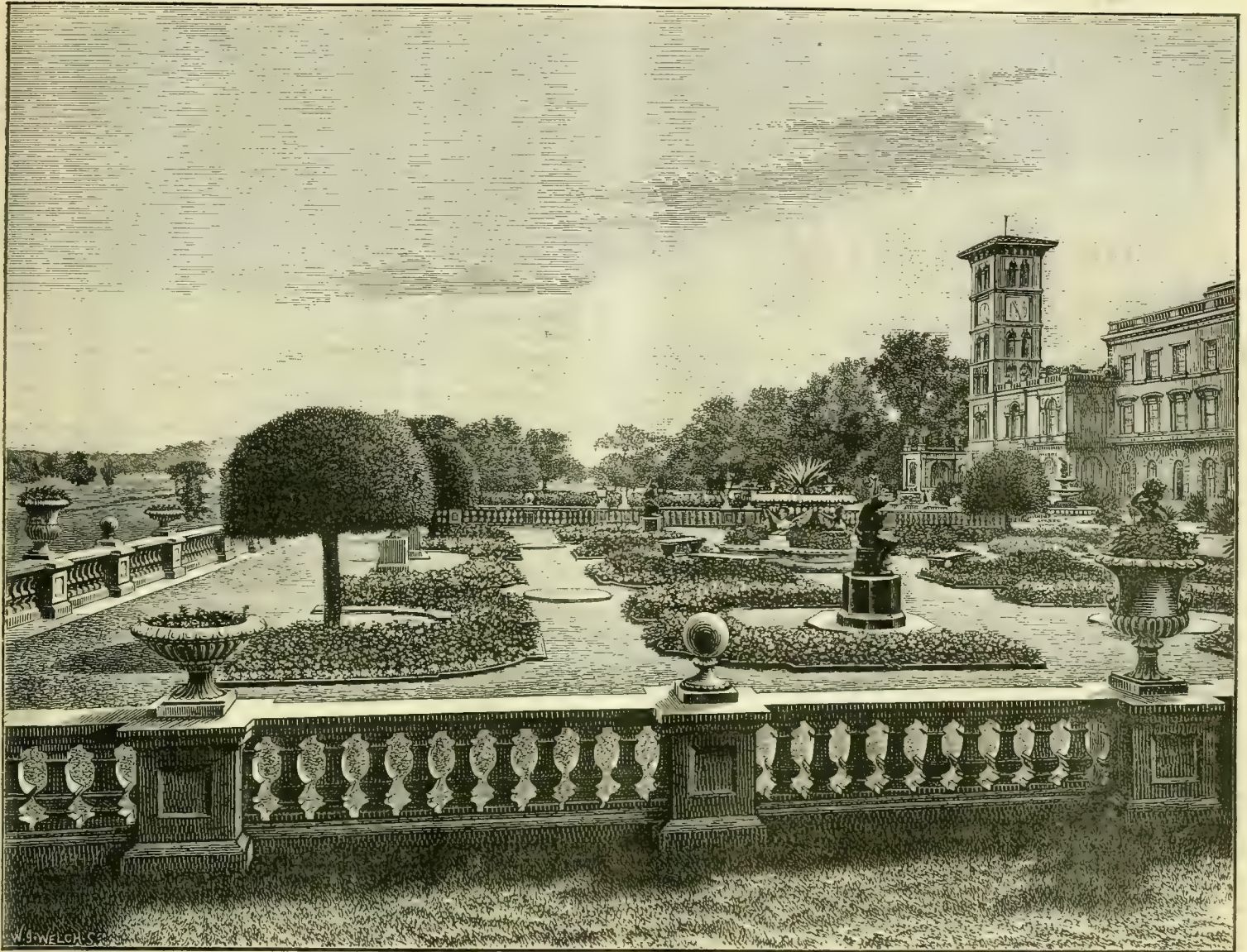


FIG. 22.—VIEW OF THE FLOWER-GARDEN AT OSBORNE, I.W.

from the ground. If I remember rightly, it had sixty cones upon it, and it was exhibited with forty-nine other kinds of Conifers at the Conifer Conference in 1891. This collection gained the first prize in the open class, and the Veitch Memorial Medal. This bunch of Sequoia-cones, together with a number of other cones of different species of Conifers, was presented by the late Dowager Marchioness of Huntly to the museum of the Natural History Society at Peterborough, and may be seen in a glass case there.

The year 1891 was prolific in cone-production in this country; but in Scotland the cones were scanty. Among the Pines were grand cones of *P. macrocarpa*, *P. Jeffreyi*, *P. ponderosa*, *P. excelsa*,

The Sequoia loses its old foliage in the months of August and September, and if strong winds prevail at this time, it is not unusual to see thousands of its old cones lying about with the foliage in the avenue here. It makes a great litter, but we simply rake up the cones and foliage together, and place them under the trees as a top-dressing, and there let them decay. No attempt is made to dig beneath them, and the old foliage decaying serves as its natural food.

As to Sequoia-seed ripening in this country, I can only speak from the experience I have had of it at this place for more than twenty years. In 1880, the late M. J. Berkeley, the great cryptogamic botanist, who was a frequent visitor

The next time, however, I met with a small amount of success. This time I tried the full-grown green cones, taken from near the top of a tree. Two or three of them were placed on some warm pipes in a lateinery, and in a day or two the scales opened, and I obtained about a hundred seeds; these were sown as before about the end of November, placed in a cold greenhouse, and the following April four tiny seedlings made their appearance; they were kept in the pot till the following April. In the meantime, two of this number died, and the remaining two, when 3 inches high, were planted in the kitchen-garden. These grew well, and in November, 1899, when six years old, were planted out in permanent stations in

the grounds. One of these has since died, the other bids fair to make a good tree; it is now 5 feet high. This is the only plant I have reared out of six sowings of English-grown seed. Plenty may be raised from cuttings, but for symmetry of form and freedom of growth they will not compare with seedlings. It may not be easy to tell any difference while the trees are less than 20 feet in height, but after that the difference is very marked. It is well seen here, where the majority of the trees were raised from seed in the fifties, the rest being from cuttings. I should be glad to know if any English seed of *Sequoia* has been tried by any of your readers, and with what results. The late Mr. Barron, of the Borrowash Nurseries, Elvaston, who was a Conifer enthusiast, once had some cones from here, with a promise that if he met with success in raising any, he would send me a few seedlings. I doubt if he ever obtained any, or he would have sent some. It is, to my thinking, one of the wonders of the vegetable kingdom that such small seeds, of which it would take many hundreds to weigh an ounce, should produce such mammoth trees. *A. Harding, Gardener, Orton Longueville.*

VEGETABLES.

BROCCOLIS AND CAULIFLOWERS.

I AM enabled to endorse all that Mr. Easter says in a recent issue of *Gardeners' Chronicle* respecting Veitch's Autumn Giant Cauliflower and Veitch's Self-protecting Autumn Broccoli. At this place we are cutting daily heads of these vegetables, and may continue to do so till the end of the month. The heads are compact, and quite white. Veitch's Extra Early Forcing Cauliflower was ready for use on June 12, and from successive sowings of this and Sutton's Favourite, the daily supply has been maintained by means of Autumn Giant and Veitch's Autumn Broccoli. To follow these, there are Sutton's Christmas Broccoli, then Veitch's Spring White, by which time the main Broccoli crop will be fit for consumption. I have found Sutton's Vanguard, Reading Giant, and May Queen excellent in their respective seasons. The kitchen garden here is not an ideal spot, it being much exposed to the north and east winds, and slopes towards the east; still, with the exception of a fortnight last February, we have been in the position to supply heads of Broccoli and Cauliflower every day of the year for the last five years by cultivating such as are suitable to the situation and locality, which have been determined by successive trials of varieties. The land is deeply trenched, and liberally manured for Cauliflowers. On a small piece of ground which was trenched last winter the Cauliflowers were better in every way. I have found that short grass from the lawns laid on the ground in the autumn to be a good manure for Broccolis and Cauliflowers. I have read in gardening papers that the ground for Broccoli should not be dug; if very light, sandy soil, this may not be necessary, but on ordinary or heavy soils digging is a necessity if good results are to be obtained, but it must be made firm afterwards. *H. Walters, Eastwell Park, Ashford.*

SPINACH—THE CARTER.

Where a large demand for Spinach exists, gardeners cannot do better than sow plenty of seed of this variety. I have grown this Spinach for the last two years, and found it to be excellent, more sturdy in habit than the older varieties, possessing very long, broad leaves of much substance, a very deep green colour when cooked, and of capital flavour. As manures on poor land, bone-meal or dried blood may be used as a top-dressing at the time of sowing, sprinkling it in the open seed-drills. In preparing the land for a crop of Spinach, afford it a moderate dressing of quicklime, wood-ashes, and fresh soot, and hack in this when levelling the land, the substances acting as manure and slug-deterrents. *W. A. Cook, Compton Bassett.*

MR. SANDERS.

THE following particulars relating to the career of our valued colleague, the Editor of *Amateur Gardening*, are taken from *The Agricultural Economist*; they should be of great interest to young gardeners:—

"I am a native of Worcestershire, having been born over forty years ago in the rural and picturesque village of Martley, within a few miles of the famous Malvern Hills. My father and ancestors have occupied the same house for nearly two centuries, and carried on the business of small farmers, limeburners, and masons. I was thus early brought into contact with the land from an agricultural point of view.

At the age of eight I was sent to the village school—distant about two miles. This was presided over by a teacher of the Squeer's type—a perfect tyrant. His conduct naturally did not offer any encouragement to boys to attend school regularly, and I must admit in my case it induced me to take a strong dislike both to attending and learning. I am sorry to say that I played truant so often, and assumed such an indifferent attitude to learning, that I was practically much of a dunce. A change of teachers occurred, however, and for the better, the new master being a kindly, sympathetic man, who ruled with firmness, but yet in such a way as to win the esteem and regard of his scholars.

Just as I was beginning to like school and take an interest in the work, my mother died, and I had no one to counsel me, or to encourage me to persevere. I again lost my interest in going to school, and as I had then attained the age of twelve, my father determined to transfer me from school to work.

MY FIRST START IN LIFE.

In starting to earn my own livelihood, I was unfortunately not given the choice of a trade or profession. My father arranged with an old friend to take me as an apprentice to the building trade. I accordingly started at this, and, strange to say, among the earlier tasks in which I had to assist was that of repairing hothouses. Here the luscious Grapes and other fruit, together with the magnificent exotic flowers, inspired me with a burning desire to become a gardener. Years before, as a boy, I used to help my mother to plant, weed, and water her flowers; and as she was devotedly attached to flower culture, I suppose I inherited my love of them and gardening from her. So deep an interest was awakened in me in gardening that I devoted all my spare moments to tending the beds which my mother, before her death, had cherished so much.

I had a strong dislike to the trade I was set to learn, and I told my father so, but he would not listen to me. I wanted to be a gardener, and he—practical man as he was—knew that my defective education was against my success in that profession. I tried my utmost to induce him to let me go, but of no avail. Accordingly, I made up my mind to run away and carry out the object of my ambition. I did so, but was brought back. Not long after, I again ran away, and my father, thinking it was of no use troubling any further after me, did not attempt to fetch me home again a second time.

I went to a registry office and managed to get a situation as page and garden-boy. I had to assist the gardener by day and wait at table in the evening or on special occasions. I was now in my element in the garden, and the gardener—good old soul—seeing how deeply interested I was in my work, gave me every encouragement. He showed me how to propagate, bud, and graft all kinds of trees, and took a fatherly interest in me.

MY DÉBUT AS A GARDENER.

After two years with this good old preceptor, I made up my mind to go in solely for gardening as my future profession. I sought the advice of the late Mr. Westland, Lord Dudley's gardener, at

Witley Court, and he offered me employment in the famous flower gardens. I worked there for a short time, then joined a cousin as assistant in a smaller garden, where I remained for two years.

Acting on Mr. Westland's advice I next obtained a situation as improver in the gardens of the Earl of Wilton, at Heaton Park, Manchester. Here I agreed to pay the head gardener a premium of 2s. weekly out of my little salary of 12s. For this he taught me all he could. I now realised the defectiveness of my education, and began to see clearly that I must go in vigorously for self-instruction. I came across *Cassell's Popular Educator*, and earnestly studied that admirable work. My good friend the gardener—Mr. Dunn—helped me with good counsel, and gave me the opportunity of sharing in all the work of the garden.

Thus I continued for two years, until Mr. Dunn obtained the post of journeyman for me at Hopwood Hall. Here the young men had to cook their own food and clean up their own apartments. We were miles away from the village, and I soon left the place and made for London.

In London I came across a young man who was about to go to France, and I, being desirous of going abroad, joined him. We located ourselves at Versailles, and found employment for a year in a nursery there. But I found French life did not suit my tastes, and I returned to England determined to go in again with zeal into the pursuit and study of my calling. To enable me to have the advantage of attending evening classes in London, I obtained a journeyman's position in a good garden in the north of London. For two years I worked hard at the practice of my profession by day and at studying the theory of it by night. Then, anxious to further increase my practical knowledge, I accepted the post of foreman in the gardens of Sir Harry Vernon, of Hanbury Hall.

The garden here was a large one, and the head gardener an excellent fellow, who spared no pains in helping me. During the three years I stayed here I lived alone in a small house, and so secured a favourable chance of studying the various scientific works on horticulture." *E. O. G.*

NATAL.

KNIPHOFIA MULTIFLORA.

IN your issue of November 10, I see a notice of *Kniphofia multiflora*, and have thought that perhaps some account of the habitat of this plant may not be without interest to your readers.

In March, 1897, in company with my friend E. Ryley, Esq., then Minister of Land and Works, I went for a botanising and collecting trip to the summit of the Drakensberg Mountains, some 5,000 to 6,000 feet above sea-level, and there, close to the border-line between Natal and what is now the Orange River Colony, I found a few specimens of this plant, but it was rather late in the season, and few plants were in flower. In the early part of March, 1898, I again visited the locality, in hope of getting more and better specimens, which I succeeded in doing, and as Mr. Max Leichtlin had, with his usual liberality, given a donation towards the expense of the trip, I therefore sent to him the greater portion of the plants of this species that I had collected, as I knew that he was specially interested in the *Kniphofias*. The plant was first described by Mr. M. S. Evans and myself in the *Journal of Botany* for September, 1897, and was afterwards figured in *Natal Plants*, vol. iii., plate 206. A wealthy Boer, on the border of whose farm some of the plants were collected, was very curious to see what he had been told was a new plant, and, on my showing the specimens that I had collected to him, said "Do you call that a new plant? Why, I have known it ever since I was a boy." This man was, and I believe still is, a commandant in the Boer army, and, I hear, has been guilty of wanton destruction of the property of Natal colonists. *J. Medley Wood, Curator, Natal Botanic Garden, Berea, Durban.*



FIG. 23.—CAMELLIA IN FLOWER, IN THE GROUNDS OF OSBORNE HOUSE.

ONIONS IN EXCESS.

FRANCIS MARION CRAWFORD has recently given us a most interesting account of "The Rulers of the South" in two volumes. The Saracens, after capturing and destroying Syracuse, located their headquarters at Palermo. At the period when the Mohamedan domination was beginning to decay, one Ibn Hankal, a merchant from Bagdad, visited Palermo.

On page 123 of the second volume is given a quotation from the account of Palermo written by this merchant of Bagdad about the year 943. Ibn Hankal, among other things, makes this funny observation:—

"The greater part of the water consumed in the various quarters of the city is dirty and unwholesome rain-water. The people drink this stuff owing to the lack of sweet, running water, and because of their own folly, and because of their abuse of the Onion, and their evil habit of eating raw Onions in excess; for there is not a person among them, high or low, who does not eat them in his house daily, both in the morning and at evening. This is what has ruined their intelligence, and affected their brains, and degraded their senses, and distracted their faculties, and crushed their spirits, and spoiled their complexions, and so altogether changed their temperament that everything, or almost everything, appears to them quite different from what it is." (!)

Not improbably Ibn Hankal may have at one time himself eaten Onions, and they disagreed with him, and hence the sweeping condemnation of this popular bulb! *E. Bonavia, M.D.*

PHLOX DRUMMONDI HEYNHOLDI.

AMONG the many annuals employed during the past summer for filling beds in the flower garden, but very few have been more attractive than this type of Drummond's Phlox. There were beds of several of the varieties in the Chiswick Gardens, and through the late summer months they furnished charming masses of bloom, and it proved much more persistent than the more vigorous-growing varieties of the large-flowering section. It will be noticed that the type Heynholdi, and the varieties derived from it, are of a distinct habit of growth, being more rigid and compact; in consequence, they produce dense heads of blossom, furnishing effective masses of colour. The plants grown at Chiswick last summer appeared to be of dwarfer growth than usual, probably owing to the drought, which was severely felt at Chiswick; but this characteristic did not in any way rob the plants of their effectiveness, and whether employed as a mass or as an edging, they were equally effective.

The type Heynholdi originated some forty years or so ago, when it appeared as a seminal sport in the gardens of the castle of Reinhardtbrunnen, in the Duchy of Gotha, this having been the favourite residence of the late Prince Consort before his marriage. On the occasion of a visit to the castle gardens, the late Mr. Ernst Benary, of Erfurt, observed and pointed out the sport to Mr. Heynhold, the head gardener, and he eventually became possessor of the seed, and it was distributed for the first time as far back as 1868, and the name of Heynholdi was given to it in honour of its having appeared in the garden over which he had charge. Mr. Benary subsequently paid particular attention to the type, and succeeded in obtaining several varieties. The original type was scarlet-coloured, and one of the earliest breaks from it was one named cardinalis, of a deeper and brighter tint, which is very handsome.

The adaptability of the varieties of this type for culture in pots is not sufficiently appreciated. Small pots suffice, and in such the plants bloom freely and persistently. The section is but a small one. There is the type; alba, which is pure white; Empress Augusta, copper-rose; a rose and white variety, known as roseus inter albus, and the brilliant cardinalis. The varieties appear to seed very sparingly indeed, as the prices of seeds are very

high. A variety of annual Phlox, named General Radetzky, was cultivated a half century ago, but had to be propagated by means of cuttings, as it did not produce seeds. It was a beautiful striped form—far superior to any of the striped Phlox Drummondii of the present day, as I remember well. It had much the habit of the Heynholdi type. I much regret that it appears to be quite lost to cultivation. *R. D.*

THE WEEK'S WORK.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. I. MEASURES, Esq., Cambridge Lodge, Flodden Road, Camberwell.

Sophranitis grandiflora.—A cool house, winter-flowering Orchid, with rich orange-scarlet flowers, is everyone's favourite, and the flowers when cut last some weeks in perfect condition. In this garden the plant is hung during the warmer months on the roof of the Odontoglossum-house, removing it to a cool intermediate-house as soon as growths begin to be pushed forth. By this mode of treatment the growth is vigorous, and the flowers are large and of good substance. *Sophranitis* does best in shallow pans or baskets, and afforded liberal drainage, and a potting compost of good turfy-peat two parts, and chopped sphagnum-moss one part. The best time to repot the plant is when new roots are being formed at the base of the last made growth. *S. rosea* succeeds when grown altogether in the intermediate-house.

Laelia Jongheana.—The re-introduction of this species during the last two or three years has been the cause of the more general distribution of the plant. It is a very nice addition to cool Orchids, and useful as well, as the plant flowers in the late winter. In its native country it grows at a great altitude, on stunted Oaks and in the crevices of the rocks in which decayed vegetable matter has collected, and the temperature throughout the year is similar to that of the cool intermediate-house Orchids. There have been complaints of its shyness to flower satisfactorily. I find they flower freely under conditions similar to that above-mentioned, although the most forward flowers were destroyed whilst in bud by fog at the commencement of the present year. The plants are grown here in shallow pans, in a mixture of two parts peat and one of sphagnum-moss, and they are suspended in the lightest positions. The plants require every encouragement as soon as they commence to make growth, but they should not be afforded an excessive quantity of water till the leaf has expanded and the flower-bud seen at the base, at which time it should be more liberally afforded. The plant takes some months after the flowers are passed before the growth and pseudo-bulbs are matured. When these are thoroughly ripened, the plant should be placed in a cooler house for a rather long season of rest. If this be done, secondary growth to a great extent will be prevented. Any required re-potting should be carried out as soon as the roots protrude at the base of the new growth.

Zygopetalums.—The late winter and early spring flowering varieties are now making new growth, from which the flower-spikes will make their appearance, and as soon as this occurs the plant should be encouraged so as to develop strong growth, and expand their flowers properly. Some of the *Zygopetalums* are apt to get spotted foliage in the early winter months, which may usually be traced to a sudden fall in the temperature, or a general low temperature at a time when the compost in which the plants are growing is moist. At that season the plants should be placed in a slightly warmer house for a few weeks, and removed to a cool intermediate-house when the weather becomes more favourable. The plants of the *Pescatorea* section, which are better accommodated in the more humid heat of the plant-stove, are at the present date emitting new roots freely, so that any re-potting that may be necessary should receive attention, as if these roots are allowed to grow to any length, it is difficult to carry on the operation without injury to the plants, the roots being very brittle. The plants of this section should be carefully examined, as no Orchid resents root disturbance more than these, and unless the compost has become decayed and sour, it is better to afford encouragement without re-potting them. The species succeeds in a somewhat shady, moist part of the Phalenopsis-house.

THE HARDY FRUIT GARDEN.

By C. HERRIN.

Plums.—Continuing the notes on pruning, we take Plums in succession to Apricots. All fore-right shoots which were not sufficiently shortened at the summer pruning should be still further cut back to two or three buds, so as to force them to form fruit-spurs. Aged fruit-spurs should be removed, young spurs coming from their base. Aged healthy trees may be quite rejuvenated by removing a few of the worst of the older fruit-spurs every winter, and reducing the number of the oldest branches, the young shoots coming in their places being encouraged. This sort of renewal of vigour can be accomplished without complete loss of crop, and in the course of three or four years. Where such trees are growing, the soil will probably be exhausted of plant-food, and should be removed wholly or partially down to the roots for a distance of 5 or 6 feet round the stems. In place of that removed, let a quantity of turfy loam, chopped moderately fine, with a small quantity of lime rubble and wood ashes, be placed over the roots, mixing some of the staple with this as the work of filling-in proceeds. The whole should be trodden firmly about and over the roots, and a mulch of strawy stable-dung applied. The pruning of younger trees will consist of shortening the leading shoots more or less, according to their strength, the strongest to 2 or 3 feet, and weak ones to a point nearly close to the old wood. Branches too thickly placed should be entirely removed. Leading shoots should not be less than 6 inches apart. Young trees are often grown with great vigour, but this exuberance should be checked by lifting and replanting until it is kept within bounds by heavy fruit crops. The fan-shaped plant is generally preferred for training on walls, but cordons are sometimes planted when the object is to fill the space in a short time. The leaders of cordons should be cut back to 18 inches, so as to ensure a regular break of shoots that will in time form fruit-spurs. In warm parts of the country, many varieties of Plums succeed against north walls, affording a succession of fruit to those planted against east and west aspects. Three good varieties that so succeed are the Greengage, Jefferson, and Coe's Golden Drop, the latter affording the latest possible supply of dessert fruits.

Standard and bush trees, where well established, will require but little pruning. The leading young shoots should be slightly shortened, and other wood in the trees where too thickly placed thinned by taking out any inter-crossing branches, or those which are too close to each other. Severe pruning usually but encourages the production of a quantity of strong shoots, which have to be removed at the next pruning. Where young standard bush trees grow stronger than is desirable, it is better to afford a check by root-pruning.

FRUITS UNDER GLASS.

By MALCOLM MCINTYRE, Gardener to Sir CHAS. TENNANT, The Glen, Innerleithen, Peeblesshire.

Pines.—The plants of the Queen Pineapple that have been top-dressed with a mixture consisting of turfy-loam and bone-meal, and to which water at a temperature of 80° has been applied, may be now afforded bottom heat of from 80° to 85°, a minimum air temperature of 70°, and at noon when the sun warms the air of the house it may safely rise to 80° or 85°. During hard weather it will be well to err on the safe side, as too much top heat induces much leaf growth, and hinders the complete setting of the flowers. If the beds have been formed recently with additional fresh bark, the heat must be closely watched, and not allowed to rise higher than 85° without slightly rocking the plants to and fro, so as to create a free space round the pots. If the balls were moistened down to the crocks, scarcely any water will be required by them for some time to come, but affording it without stint when the state of the soil shows water is required. Keep the plunging material moist; and damp the walls and paths once in dull, and twice a day in sunny weather; and whilst keeping a genial growing moistness in the house, avoid overhead syringing of the plants, as this is apt to cause too great development of the crowns.

General Stock of Pines.—Afford a mean temperature of 70°, varying it according to external conditions; afford air in small amounts at 80° with sunshine, and allow the heat to rise to 85°. Dew

the plants over occasionally in the forenoon, if there is no water in the axils of the leaves.

Succession Plants.—In this house a night temperature of 60° to 65°, 5° less in severe weather, may be kept up, the gardener being guided by the prevailing weather. Keep the plants rather dry, but not excessively so. When water is required, afford it with thoroughness, and at a temperature not higher than 80°. The right temperature for the sucker pit is 55° to 60° at night, 60° to 65° during the day by fire heat, with a 10° increase when the sun shines.

Peach-house.—Trees that are coming into bloom should be fumigated moderately as a preventative of an attack of green-fly, at that stage which might spoil the crop. As soon as the flowers begin to expand, let the temperature be raised by fire-heat during the day to 60° or 65°, allowing it to fall to 50° or a few degrees lower during the night, as Peaches will set well in a night temperature of 50°. Afford more ventilation at the bottom of the house, at the same time avoiding cold draughts. Discontinue to syringe the trees; walls, and paths being wetted with tepid water instead when the days are bright, and the weather mild. By attending to this, and bringing the trees on slowly and admitting fresh air, the flowers will open strongly, pollen will be abundant, and the roots being in a proper condition, a good set of fruit will be the result.

Fertilisation.—As a matter of course this will receive attention when the pollen is ready for distribution. Ply the brush with a light hand, taking care not to use it so roughly as to injure the tender organs of the flower. Whenever the temperature reaches the maximum, let the trees be brushed over; and as soon as the petals begin to drop, afford them a light syringing with water. Repeatedly turn the heap of fermenting materials. Trees started at the new year should be syringed regularly, taking care, however, to get the flower-buds dry before nightfall; use but little fire-heat when the weather is mild, which is not difficult when beds and the fermenting material are properly managed. A temperature of 50° is suitable at this stage. Let all the forcing be done during the hours of sunshine, admit plenty of fresh air; and when the buds are about to open, maintain an equable night temperature of 45°.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HUSSEY PACKE, Esq., J.P., Prestwold Hall, Loughborough.

Soils.—All stores of light and heavy loams, peats for Ericas, New Holland plants, and Azaleas, and for stove plants, also leaf-mould, and half-decayed leaves, should be brought in from the depôts and put under cover, so that they may be brought into a suitable condition for use. Flower-pots should be washed, sized, and stacked handy for use. Crocks should also be washed clean, and passed through sieves of three different grades.

The Greenhouse.—The re-arrangements carried out in the conservatory will involve the introduction of successive batches of Narcissus in variety, Daffodils, Freesias, Duc Van Thol, and yellow Chrysotoxa Tulips; Lily of the Valley, Hyacinths, Azalea mollis, Spiræas, Lilium Harrisii, &c., from cold frames. Let the Tulips be put under the stages in a warm dark corner, so as to induce further growth, covering the soil with moss, which should be damped daily. When the growths are 6 to 8 inches long, place the bulbs upon the stages. Cineraria cruenta hybrids promise to be good decorative plants at this season, and I would advise those ordering seeds not to omit to order a packet of the seed. Pelargoniums that were placed in their flowering-pots some time ago must be kept near the glass, and should have the strong young shoots brought down horizontally, and the weaker ones removed. Encourage the plants by affording weak liquid-manure after the pots have become filled with roots. Cuttings struck late and now standing in small 60's, should be repotted into 48's, and placed on a shelf near the glass.

Richardia Elliottiana.—Tubers of this plant which have been at rest in the greenhouse should now be carefully denuded of the soil, and placed in small pots of various sizes according to the size of the tubers, only sufficient room being afforded as will give them a small quantity of soil at the start. The stronger flowering tubers may require a 7 or 8-inch pot. A suitable kind of soil at this stage consists of turfy loam and leaf-mould in equal proportions, together with a considerable

quantity of sand. In potting, let a handful of sand be placed at the bases and over the crowns of the tubers. Place them on a shelf in a temperature of 60°, syringing daily; water sparingly until root-action takes place, and when the young growth is perceptible, water may be given more abundantly.

Propagating.—Cut down Dracænas which have lost many of their lower leaves, planting the heads in large 60's, and plunge these in a bottom-heat of 80° to 85° under hand-glasses, and keep moist, and shaded from sunshine. If not permitted to flag, they will not lose any more leaves, but make useful table plants. The stems may be cut into lengths of 2 inches, and placed in pans filled with sandy soil and plunged in a hotbed to form roots. The fleshy tubers of Dracænas, if treated in a similar manner to the stems, form a useful means of propagating purposes for these plants. The varieties *D. gracilis*, *D. Godseffiana*, and *D. Sanderiana*, are propagated from the young growths. Dieffenbachias may be similarly increased.

Seeds.—The following seeds may be sown forthwith in pots and pans filled with a finely-sifted compost of loam two-thirds, leaf-mould one-third, and silver-sand, viz., *Chianthus Dampieri* and *C. puniceus*, *Grevillea robusta*, *Dracæna indivisa*, *Veitchii*, *Clerodendron fallax*, *Richardia Elliottiana*, *Solanum Weatherall's Hybrid*, *Asparagus Sprengeri*, *Phormium tenax*, *Celosia plumosa*, *Primula obconica*, *Torenia Fournieri grandiflora*, *Mimosa pudica*, *Francoa ramosa*, *Celsia arcturus*, *Streptocarpus*, "hybrid vars.," *Schizanthus retusus* and *S. pinnatus*; *Rhodanthe Manglesii atrosanguinea*, and *R. maculata*, *Saintpaulia ionantha*, double and single flowered tuberous-rooted Begonias, and Gloxinias. These may be placed in a hot-bed frame or house having a temperature of 60° to 65°, placing the pans containing Begonias and Gloxinias on a shelf in order to prevent the soil getting too much water. Seed of Mignonette may be sown in 4-inch pots in a compost of loam, leaf-mould, dry cow-manure, and lime-rubble, making the soil in the pots firm, and placing the pots in a warm frame. For the purpose of forming large plants, sow the Giant Crimson or "Miles' Spiral" Mignonette in small 60's, and thin out the seedlings one or two per pot, shifting them into bigger pots as may be necessary.

THE FLOWER GARDEN.

By T. H. SLADE, Gardener to Lord POLTMORE, Poltmore Park, Exeter.

The Herbaceous Border.—The manuring and hoeing and top-dressing, or the digging of borders of herbaceous perennials, may be undertaken at any time during the next four weeks. If some rich hot-bed or other soil is at command, it may with advantage replace the surface soil around surface-rooting plants; and manure should be pretty freely employed, the numerous plants usually grown in such borders soon exhausting the soil of plant-food. Decayed manure afforded at this season, and an occasional sprinkling of artificial manure during the spring and summer months, will greatly assist the growth of the plants. Clumps of Montbretias may be lifted, the largest bulbs selected, and replanted in fresh spots. Perennial Asters, Chrysanthemums, and Harpaliums are plants that increase fast, and large clumps will need to be reduced in size, which is an operation best performed by lifting and dividing them, or, failing that, by cutting away a portion with a spade. *Anemone japonica* requiring attention in this respect should be lifted in so far as regards pieces growing distant from the main clump, but not disturbing the latter. The bits dug up are of use for planting elsewhere. Spring-flowering plants may be planted in vacant places. See that all patches and lines of bulbs are indicated by durable labels, and do not disturb the bulbs.

The Flower-beds.—Make firm in the soil all plants loosened by frost and wind, and remove rubbish, dead leaves, &c.; and stir the soil with a Dutch, or the short-handled draw hoe.

Rhododendrons.—Young grafted plants of these may throw up shoots from the stock, and these should be cleanly removed with a sharp knife. The planting of Rhododendrons may still be done in favourable weather, and if planted in beds, the shape of each bed should be carefully preserved, or the result will be far from pleasing. Several plants of a variety when grouped together afford an immediate effect, but single specimens of ten or fifteen years' growth have a more natural appearance. It is not necessary to plant them exclusively in fresh soil, for by adding peat to the beds or

borders intended for them they will thrive well if lime and chalk are absent; sandy loam suits them admirably, and if the soil is heavy, in trenching the ground for planting, work in some leaf-soil with it. Do not plant any that are dry at the roots until they have been soaked in water. *R. Nobleanum*, until a few days since, gave some bright colour in this district, but the frost has spoilt it for the time being.

Herbaceous Perennials.—Few of these plants are more beautiful than Delphiniums, whether planted as a back row in the border, or as clumps or masses elsewhere. They are not fastidious in regard to soil, although a loamy soil of good depth produces the finest flower-spikes. A packet of choice seed, as now offered by the seedsman, will afford fair results, but the flowers thus obtained cannot be compared to the finer named varieties. A good investment is to purchase some named sorts, and when large enough, to increase them by division, or allow some of them to seed, and augment the stock by seedlings. Such plants may be lifted just as they are about to recommence growth, and divided. Plant the pieces in good soil, and afford water frequently during the summer, or apply a mulch of half-rotten manure, and in winter cover the crown with coal-ashes as a protection against snails and slugs. The colours of perennial Delphiniums range from light to dark blue, and some possess a white centre; and there are some of various shades of mauve. Good varieties which I have grown, and are fairly cheap, are Geneva, Alfred Henderson, Buffalo, Florence, Prince of Naples, Robin Adair, Lord Brassey, Lord C. Beresford, Prince Henry, Sara, &c.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bicton, East Budleigh, Devonshire.

Horseradish.—The cultivation of this root is more or less neglected in our gardens, but a little more attention in the way of making a new plantation occasionally, say, every third or fourth year, would afford much finer produce than is generally seen. The planting of the sets may at once be set about, choosing as the site of the bed a piece of land which has not borne Horseradish for many years, trenching it from 2 to 2½ feet deep, and burying a quantity of manure about midway. As soon as the soil has settled and got firm, let it be levelled and raked smooth, and lined out at 1 foot apart. The sets should consist of middle-sized pieces 6 inches long, those with a crown to be preferred. If there are any side-shoots on the sets, let these be rubbed off, and bury the crown of the set 1 foot below the surface. If the land has not been dug as yet, the sets may be made and laid in sand for future use, as may also any surplus pieces.

Rhubarb may now be planted, and like Horseradish, it pays to plant on fresh ground. Prepare the ground as for Horseradish, and plant in lines 3 to 4 feet in each direction. In dividing the roots, preserve a bud to each division; no stalks should be taken from freshly-planted roots till the second year. Royal Albert, Myatt's Victoria, and Daw's Champion are excellent Rhubarbs, the latter being recommended for its earliness and fine flavour.

Present Work.—If any of the Cabbage planted in the autumn have got twisted by wind, make the soil firm about them with the feet, and ply the Dutch hoe between the rows in dry weather. Spinach needs to have the ground that has been made hard by daily trampling loosened with a draw-hoe or digging-fork; and if the plants are lacking vigour, afford a dressing of wood-ashes or soot carefully before disturbing the surface. Point and sort into sizes Pea and Runner Bean sticks. Let early Peas and Beans be dressed frequently with wood-ashes, and when 2 inches high draw some soil close up to them, and put a few twiggy shoots on each side of the rows. If mice devour the seeds, which is their wont just as the plants are coming through the soil, set traps for them without delay. Peas sown last month in large pots or boxes for yielding a crop in the same, must be kept near the glass and afforded ample ventilation, staking before the stems bend over, as once bent at an angle, they never start away kindly again. Do not hurry the plants before the pods form, at which time some mild manure may be applied.

French Beans.—The plants must be kept near the glass, and the syringe plied amongst them daily when not in flower; and the temperature kept at 60° by night, and in bright weather 70° by day. The best size of pot at this date is 9-inches.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, JAN. 29 { Royal Horticultural Society Committee Meeting at the Drill Hall, Westminster.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—48° 9'.

ACTUAL TEMPERATURES:—

LONDON.—January 23 (6 P.M.): Max. 41°; Min. 40°.

January 24—Dull, slight rain.

PROVINCES.—January 23 (6 P.M.): Max. 46°, S. Devon; Min., 40°, North-east Scotland.

Queen Victoria,

DIED AT OSBORNE, JANUARY 22, 1901.

"Revered; beloved."

OUR supplementary illustration this week represents the range of houses erected in the Botanical Gardens, New York; and at fig. 25, p. 63, we also give a view of the museum of the same establishment. For the opportunity of giving these illustrations we are indebted to the Director, Dr. BRITTON, who visited Europe last autumn for the purpose of obtaining information, and of furthering the interests of the establishment under his charge. Existing botanic gardens are the outcome of the changes and chances of a long series of years; some have come down to us from mediæval times, when circumstances and requirements were very different from what they are now. Some have been able to adapt themselves to new conditions, others remain as interesting survivals, but hardly representative of the science of the day, or the requirements of the time. Some are instructional only, supplying the professors and students with a relatively small number of specimens for teaching purposes. Some are educational in a wider sense, being adapted not only for class requirements, but also for stimulating the interest of even casual visitors, and of diffusing widely a knowledge of botany, and of the aims and objects of that science.

A few establishments are treated as pleasure-grounds for recreative or ornamental purposes only; these have really little right to be called botanic gardens. Some not only afford the means of instruction in what is known already, but they furnish opportunities for original research, experiment, and the progressive development of the science.

It is needless to say that while all are useful in their way, the last-mentioned is much the most important. Our own Kew, of which we are so justly proud, combines in greater or less degree all these functions.

The gardens at New York are devised to compass the same ends. They start afresh, untrammelled by old ideas and restrictions, and it will be a matter of great interest to watch their progress.

The *Journal of the New York Botanical Garden*, some numbers of which are before us, is a monthly periodical in which the progress of the garden is duly chronicled, and in which botanical or horticultural matters of general interest are treated in a non-technical way. The details already published are too numerous for us to treat of them at length. It must suffice to give a few indications only.

The garden is situate at a short distance from

and PRANTL. Each plant is labelled, the label setting forth the name, and the native country of the plant.

The range of houses, of which we show the central portion with one wing, is now partly occupied. The central block, with a dome, is 100 feet in diameter, and over 80 feet in height, without a pillar or other impediment to the free growth of the plants. In the wings the plants are placed on slate stages which run along the sides of the house, with a similar arrangement in the centre of the house. Each wing is terminated by a square house about 60 feet in width, and 45 feet high. There are no stages in these compartments, the plants being grown in tubs or pots. The heating of the entire range is accomplished by steam-pipes. At present about two-thirds of the range has been built, five other compartments are to be erected when funds permit, a detail

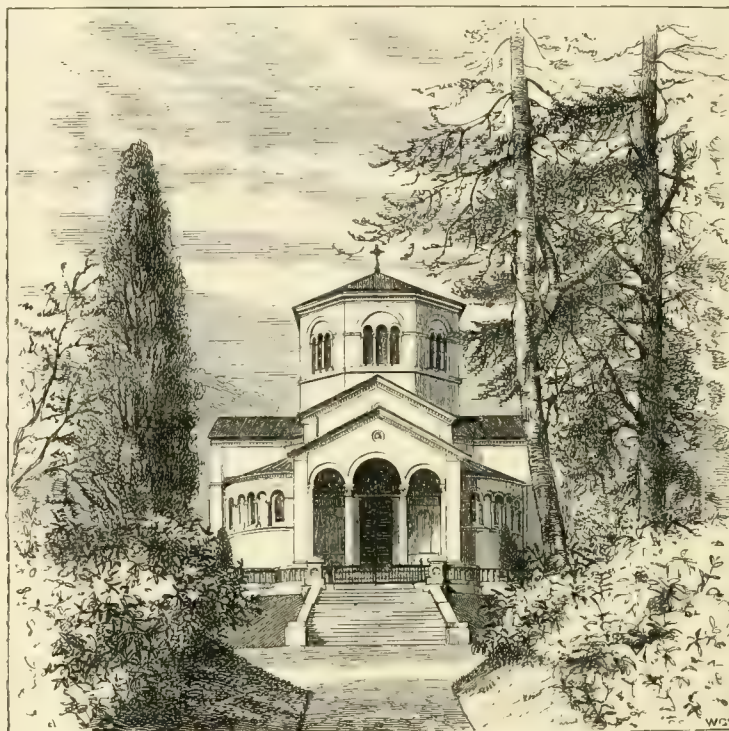


FIG. 24.—THE MAUSOLEUM, FROGMORE.

the city, east of the Hudson river, and traversed by the Bronx river. It is easily accessible by trains on the Harlem railroad, by the elevated railroads and trolley cars.

Some portions of the grounds are already established, such as the herbaceous ground, to which eight acres are allotted. The collection of shrubs, which occupies fifteen acres, the salicetum devoted to the collections of Willows and Poplars, the arboretum ninety acres, the pinetum thirty acres, the "viticetum," wherein all kinds of hardy creepers and climbing plants are placed, and the boundary, thirty to forty feet in width, planted with shrubs and trees to form a screen, and afford shelter.

Some forty species of trees are native to the locality, including a fine group of Tulip-trees, and the Hemlock Forest (*Tsuga canadensis*), along both banks of the Bronx river.

In addition to these departments, there is a nursery for duplicates, and plants too young to be set out, and for purposes of propagation. The arrangement followed is that of ENGLER

which has to be considered even in the States! When complete the thirteen houses will occupy about 45,000 square feet of floor space, or about one acre. This is not more than about one-third of the area under glass at Kew, so that it is expected that one or more great glasshouses will be needed in the future. Many plants have already been given to furnish the conservatories. Mr. S. HENSHAW is the head gardener, and Mr. NASH is the curator of the plantations.

The museum building, fig. 25, p. 63, is claimed to be the "largest, most elegant, most satisfactorily illuminated, and, for its purposes, the best adapted of any similar edifice in the world." The frontage is 308 feet, and the height to the top of the central dome is 110 feet. The whole building is fire-proof, and is heated by steam-pipes. In the concreted basement is a lecture-room to hold 700 persons, halls adapted for flower shows, and various offices. The first floor is devoted to the Museum of Economic Botany. The second floor comprises the general botanical museum, with illustrations of the

structure and adaptations of plants, and of the several natural orders.

Each specimen is or will be carefully labelled, the object being to supply answers to the questions which intelligent observers are likely to put.

The library is on the third floor, the dome being utilised as a reading-room. About 10,000 volumes are provided for, and provision is made for future extension. Some of these books are the property of the Columbia University, but deposited in the garden under an agreement with the Board of Managers and the Trustees of the garden, as the books belonging to the Trustees of the Lindley Library are deposited in the council room of the Royal Horticultural Society.

The laboratories for embryology, morphology, physiology, chemistry, and photography with dark rooms, and other appliances, are on the same floor as the library.

The herbarium is in the east wing, and comprises about 600,000 specimens, some the property of the Columbia University, others of the garden. The collections of fungi are especially rich.

The museum is, at present, lighted by gas, but provision is made for its substitution by electricity. The museum and its equipment have cost about 300,000 dollars, which have been provided by the city of New York.

We are indebted to Dr. BRITTON, not only for various photographs showing the construction of the garden and its buildings, but also for much valuable information. Further particulars are given in the *Journal of the New York Botanical Garden*, edited by Dr. D. T. MACDOUGAL, the Director of the laboratories.

From what we have said, it is clear that the New York Botanical establishment will rank among the most complete and best equipped establishments of the kind in the world. But, however excellent the equipment may be, it will be of little use unless the staff and the direction rise to the level of their opportunities. That such has been already the case is quite evident, that it will be still more so in the future can hardly be doubted.

The Royal
Horticultural
Society.

THE near approach of the annual meeting induces us to remind those of our readers who intend to exercise their rights, that they

must do so at once, or lose their opportunity for the year. The annual meeting is fixed to be held each year on the second Tuesday in February.

"Notice of the day, time, and place of holding the annual meeting shall," according to the bye-laws, "be sent to all Fellows of the Society not less than seven days before the date of such meeting."

It will be observed that nothing is said as to the business, other than formal, which may be brought before the meeting. Thus, it is possible that some great surprise may again be in store for the Fellows, and those present at the meeting may be led to vote upon subjects upon which little or no adequate information has been previously given, as was the case last year.

Again, it will be noted that whilst the Council is to send out notice of meeting not less than seven days before the time appointed, the nomination of new members of Council or other officers by the outside Fellows must be made fourteen days prior to the date of the annual meeting. The effect of this is to compel Fellows desirous to nominate some other Fellow for election to the Council, &c., to take proceedings without any knowledge of what the Council itself proposes to do. The

proposals of outside Fellows might thus very likely be rendered futile.

We append a copy of the bye-laws referring to the election of members of Council, &c. :—

"60. One-fifth of the members of Council shall retire every year at the annual meeting. In the years 1900, 1901, 1902, and 1903, the Council shall prescribe the one-fifth of the original members who are to retire, and in succeeding years the one-fifth of the members who have been longest in office shall retire. Retiring members shall in all cases be eligible for re-election, unless disqualified under some bye-law for the time being in force.

61. Any member of the Council may resign his seat on the Council, and the Council shall have power to fill up the vacancy so caused.

62. If any member of the Council dies, or becomes incapacitated from any cause whatever before the expiration of his term of office, the Council shall fill up the vacancy so caused.

63. For the purpose of the last bye-law, a member of the Council may, by resolution of the Council, be declared incapacitated who shall fail to attend a meeting of Council for six calendar months, or who shall be suffering from any bodily or mental disqualification.

64. If at the time of any annual meeting a vacancy in the Council, created by the death, resignation, or incapacity of any member, has not been filled up by the Council, such vacancy shall be filled up at that meeting.

73. Any two or more Fellows desiring to nominate any other Fellow for election to the Council, or for appointment to the office of President, Vice-President, Treasurer, or Secretary, shall leave a nomination in writing signed by them at the offices of the Society at least fourteen days prior to the date of the annual meeting."

OSBORNE HOUSE will have a melancholy interest for our readers, as the place wherein our beloved QUEEN drew her last breath. Osborne was the private property of Her Majesty, on the north side of the Isle of Wight. Though scarcely so sheltered as some other parts of the garden island, it is yet sufficiently so to allow of the Chusan Palm, and other generally tender plants growing in the open. Our illustrations (figs. 22, 23, and 26) comprise representations of part of the flower garden, of a fine Camellia in full bloom, and of a Conifer which was planted by the QUEEN herself.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Floral and Fruit Committees of the Royal Horticultural Society will take place on Tuesday, January 29, in the Drill Hall, Buckingham Gate, Westminster, 1 to 4 P.M. A lecture on "Some of the Plants Exhibited" will be given by the Rev. Prof. G. HENSLOW, M.A., &c.

MR. N. E. BROWN.—Horticulturists, and there are many, who, like the botanists, have been often under obligations to this gentleman in the herbarium at Kew, will regret to hear of the trouble which has befallen him in the death of his son on the 15th inst.

THE TRADE-POISONS BILL.—At a meeting of the Coal Tar Distillers' Association, held at the London Chamber of Commerce on Tuesday, Jan. 8, 1901, Mr. S. B. BOULTON presiding, the following resolution, proposed by the Chairman and seconded by Mr. C. D. T. BUSHILL, was carried unanimously:—Resolved: "That the draft Bill formulated by the Traders in Poisons Protection Society, with the alterations suggested and adopted by this meeting, receive the support of the Tar Distillers' Association." T. G. DOBBS, Secretary, the Traders in Poisons Protection Society, 5, Clement's Inn, Strand, London, W.C.

— At a meeting of the Inverness Chamber of Commerce, held at Inverness on the 8th inst., the

subjoined motion was moved by Mr. DONALD MURRAY, and seconded by Mr. J. A. GOSSIP (Messrs. HOWDEN & Co., nurserymen):—"That the Chamber resolves to petition Parliament in favour of the proposed Bill to alter and amend the law relating to the sale of poisons and poisonous compounds for agricultural and trade purposes." The motion was unanimously adopted.

A NEW USE FOR A THRESHING MACHINE.—On Sunday morning, December 16, the 60-horse power boiler burst in the establishment of ANT. C. ZVOLANER, Grand View, N. J. The establishment comprises some 10,000 square feet of glass. By the prompt assistance of many friends, an engine such as is used by farmers for threshing grain was procured, and by four o'clock of the same day steam was being supplied through a 1-inch pipe running from the dome of the engine and connecting with the large main of the greenhouses which furnishes the entire place. The main return was disconnected from the damaged boiler to allow the exhaust steam to pass out. By running in this way frost was kept out of the houses. The following day a second engine was obtained, and by means of the two 55° to 70° was kept up. The engines were in use for five nights, or until the damaged boiler had been repaired. *Florists' Exchange, New York.*

THE BOX IN BRITAIN.—There is a very interesting note in the number of the *Journal of Botany* this month relating to the Box (*Buxus*) and the Yew. Count SOLMS-LAUBACH has suggested that these two trees growing on Box Hill, in Surrey, are the remains of a native forest which originally clothed the North Downs. As it is probably the only thing of the kind in the world, it is desirable that careful enquiry be made into its history. The points to be ascertained are, among others, whether the trees are natives, or whether they were originally planted. If so, when? and by whom? How far, and in what direction, do the Box woods extend? Mr. CEDRIC BUCKNALL, in the same number, gives details relating to a Box wood in Gloucestershire.

TEA-GROWING IN AMERICA.—Our readers may remember that some time since we drew attention to the experiment of Dr. C. H. SHEPARD, of Summerville, South Carolina, on the production of Tea as a paying industry. The chief drawback to the Doctor was cheap labour; this he has now overcome in a satisfactory way, and to-day the Agricultural Department at Washington is assisting in the experiments necessary, and it is clearly proven that a fairly good profit, together with a good Tea, can be produced in several of the Southern States of the Union. Capitalists are now ready to enter the field; meanwhile, the Department continues its experiments, more especially those connected with irrigation and the shading of the plant from the direct action of the sun's rays. It is claimed that irrigation is of value, and that shading simply doubles the crop. All this may be tested in Ceylon and India, and the benefits to be derived be of an all-round character.

CROHAMHURST.—It will be pleasant news to Londoners that the speculative builder will not enter into possession of the beautiful wooded hill, south of Croydon, known as above. For a long time the speculators have been nibbling at this "magnificent site for building purposes;" but the Croydon County Council have stepped in, and it is expected that in a very short time the land will be freed for ever from all objectionable interference.

GARDEN PRODUCE BY RAIL.—The superintendent of the Great Eastern Railway obligingly informs us that the statement of the number of farm produce boxes carried on that line during last year numbered 149,100. The number carried for the first half of the year was 77,800, leaving 71,300 as the total for the second half year. There will not be any alteration in the company's terms or otherwise during the current year.

PORTFOLIO OF NEW CHRYSANTHEMUMS.—

Mr. H. J. JONES, of the Ryecliff Nurseries, Lewisham, has issued a portfolio, including twenty photographs of new varieties of Chrysanthemums that he will distribute this season. The photographic reproductions are $7\frac{1}{2}$ by 9 inches, and the preface explains that in all cases the actual flowers are larger than shown. They are printed on good paper, and give a sufficient idea to Chrysanthemum growers of the build and type of petal of each flower, but being black and white reproductions they do not convey any idea of colour. From this point of view it would have been more convenient had the Portfolio included descriptions of each flower, instead of having to seek them in another catalogue. The novelties are a grand batch of exhibition flowers, and several of them, such as Mr. J. Cutts and Mr. S. Fryett, seem to possess considerable refinement. The Folio may be obtained post-free for eight stamps.

PRESENTATION.—Mr. A. J. ALLSOP, head gardener to Viscount PORTMAN, was lately the recipient of a Clock, mounted in a handsome walnut case, presented by the *employés* under his direction on his leaving Bryanston, Blandford.

"CORNWALL AS A WINTER RESORT."—This is the fourth edition, revised by Mr. E. KITTO, of a little pamphlet directing the intention of medical men and their patients to the advantages offered by Cornwall as a not too distant spot in which to rest or recover. The equability and mildness of climate usually peculiar to Cornwall, are evidenced by the exotic and semi-tropical plants that thrive in the county, which, in scientific and other interests, has much to offer to attract intelligent visitors. Those strong enough to do so, enjoy many excursions when weather permits, while less robust constitutions draw benefit from the "soft" air, and the beauty of their immediate surroundings.

THE GLASTONBURY THORN.—Several of our correspondents have favoured us with specimens of this early flowering variety. The legend runs that JOSEPH of Arimathea, walking in the neighbourhood of Glastonbury, paused to rest, and while so doing stuck his staff into the ground. The staff took root, grew, and thereafter blossomed every Christmas-day (see Rev. T. F. THISELTON-DYER'S *Folklore of Plants* (1889), p. 195). Most people treat this as a legend pure and simple, having as its basis the fact that some varieties of Hawthorn, as of many other plants, do produce their flowers and expand their buds much earlier than others. There are others, however, who are disposed to put a literal interpretation on the matter. One of our correspondents, for instance, living in Gloucestershire, tells us that he "paid a visit to this Thorn on Saturday evening last, and in the company of fourteen others awaited the sudden expansion of the blooms, which was supposed to take place at midnight; but it did not take place! and after waiting till about 12.20 made for home, convinced that all legends are not facts."

M. GEORGES MANTIN.—This well-known orchidophile has been nominated a Chevalier of the Legion of Honour.

THE SURVEYORS' INSTITUTION.—The next ordinary general meeting will be held in the Lecture Hall of the Institution on Monday, January 28, 1901, when the adjourned discussion on the paper read by Mr. R. E. MIDDLETON (Fellow) at the meeting of December 10, 1900, entitled "The Future of the London Water Supply," will be resumed. The chair will be taken at 8 o'clock. The annual dinner will take place on Monday, March 4.

GRAPES IN NEW YORK.—The harvest in the Grape vineyards of Western New York State is estimated to have amounted to 22,500,000 nine-pound baskets of Grapes—or nearly 3 lb. of fruit for every man, woman, and child in the United States. It may be noted in connection with these figures that, contrary to the belief generally obtaining,

the largest Grape-growing region in the world is Western New York, which carries the title by virtue of 50,000 acres now entirely in Grape culture. In the Kanka Lake region of Western Central New York there are 30,000 acres in vineyards—the other 20,000 acres being in the Chautauqua half. These two districts are united by a sort of Grape isthmus running down towards the south-west corner of the State.

MR. CHARLES G. GIRDHAM.—We are pleased to announce the appointment of Mr. CHARLES G. GIRDHAM, sub-foreman in the Arboretum, Royal Gardens, Kew, to a position in Messrs. W. CLIBRAN & SON'S establishment at Altrincham, where he will take charge of the Catalogue department.

HOME CORRESPONDENCE.

APPLE NEWTON WONDER.—Herewith I enclose two photographs of the famous Newton Wonder Apple, which was raised by William Taylor, King's Newton, Derbyshire, from a pipkin of the variety Blenheim Orange planted in the year 1870. The tree was originally much nearer the very old-fashioned thatched house. When the house was converted to a more modern style, the tree was replanted in its present position, and a fine specimen it is. One of the photographs represents the tree when in bloom, and the other was taken when the fruit was ripening. The tree was literally wreathed with fruits, and, considering it grows over hungry Rhubarb roots, the crops the tree bears are wonderful. No collection of Apples is quite up-to-date that does not include Newton Wonder, and it is at the present time holding more than its own at competitive exhibitions against any other variety. *William Taylor, King's Newton, Derbyshire.* [The photographs quite bear out what our correspondent has described, but we regret that they are unsuitable for reproduction in these pages. Ed.]

BEGONIA GLOIRE DE LORRAINE.—I enclose half a dozen blooms of this magnificent Begonia, which have been grown by Mr. Pinchbeck at Burley-in-Wharfedale. They measure above 2 ins. in diameter, one being about $2\frac{1}{2}$ ins. The plants are growing three together in a 6-inch pan, and Mr. Pinchbeck estimates that to each pan there are 500 flowers. This Begonia is one of the finest introductions of late years. My friend has several seed-pods on his plants. It would be interesting to know if this is unusual. *J. Snell, Farnley Gdns., Otley.* [The flowers sent by our correspondent are larger in size and paler in colour than the type, being very similar to the form known as Mr. Leopold de Rothschild, which originated in the gardens at Gunnersbury House. It is not unusual for B. Gloire de Lorraine to produce seed-pods; the question is whether the seeds will be fertile. Ed.]

MARKET FRUIT GROWING.—I have visited many establishments devoted to fruit growing, especially those of the better class, but I have never in them found such a deplorable condition of things existing as "C. M. A." so pessimistically describes. We have many market establishments where Grapes, Melons, Cucumbers, and Tomatos are grown that cannot well be excelled. We have many market gardens where fruit of hardier nature is admirably done—the Crystal Palace show tells so much. We have many nurseries where fruit trees, as well as fruits, are produced, superior to what can be found anywhere in the world. The charge made, that Grape-growers allow Vines practically to run wild, may apply to some sloven's houses, but never to any good establishment such as we have so many of. A visit to one untidy or slovenly place may breed disgust, but it should not cause every similar place or garden to be so regarded; that seems to have been the case with your correspondent. A.

THE BRITISH OAK.—While not disputing Mr. Simpson's assertion (*Gardeners' Chronicle*, p. 32), that the *lias* formation is, "as a rule, naturally well drained," &c., I must take exception to his description of it in regard to this particular spot, because it does consist of stiff clay, and nothing else, and this occurs to so great a depth that Mr. Simpson would get tired of digging long before he found the bottom. And again, where he says of

my note, "he speaks as if the pond had not long disappeared." Surely he wrote his note without referring to mine on p. 382, November 24. My words there are, "which I am told was once a pond many years ago." If that fails to convey to Mr. Simpson's mind that the pond was long since done away with, what must I say that will do so? But one would think the size of the trees mentioned would be enough. Who would plant Oaks in a pond, or succeed in growing them if they were planted? The idea is absurd. What I contended in my note was (as I expressly stated), that good Oak timber can be grown in a wet situation, and this is a proof of it. No doubt it is possible to have too much moisture; it is also possible to be too dry. I have not Mr. Niven's description of the Oak-trees here to refer to, but if he said they were growing on steep, dry ridges above the castle, he only mentioned a part of them, and did not see the largest and finest trees which I referred to as growing in the bottom of the dell; they are the best, and by far the healthiest, not because they have a greater depth of soil, but solely because they get the most moisture. Those on the hill-sides are by no means deficient of soil, because the hills here contain no stones. Newstead is about 20 miles N.W. of Belvoir, but whoever told Mr. Simpson the rainfall there is only 18 inches must have made a mistake. The average rainfall here is 26.86 inches, which is very near to Mr. Simpson's figures; but how an average can be "sometimes less" I must leave Mr. Simpson to explain—it is one of those things that are quite beyond my comprehension. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

QUICK COLLECTION AND DELIVERY OF ORCHIDS.—In these competitive days, it may be interesting to the readers of the *Gardeners' Chronicle* to hear of what I believe to be a case in point in Orchid collecting. On Saturday, November 24, my son, D. A. Cowan, left Liverpool by steamer for Venezuela, to collect Orchids for our Company, and we have to-day, January 19, received from him, ex R.M.S. *Atrato*, the first consignment of Orchids, exactly eight weeks from the time of his leaving Liverpool. If this does not exceed anything that has hitherto been done in South American plant collecting, I should be glad to know of any smarter performance. I may state that Mr. Cowan's outward passage was by no means a quick one, as he was, owing to bad weather, several days late in arriving at La Guayra; and he reports that when he reached Caracas (the capital), he found the country in a very disturbed condition, which added to his difficulties. He says:—"The day after I arrived the Government were commandeering all the mules and saddles they could get hold of. They simply stopped people in the street and told them to dismount, as they required the mules, &c." *John Cowan, Gateacre Nurseries, Liverpool.*

THE DECAY OF PEARS.—In reply to your correspondent, "A. D.," p. 48, Pears have not been quite satisfactory in the matter of keeping this season. I had several varieties, Pitmaston Duchess, President d'Ormanville, Beurré Fonqueray, Gansel's Bergamot, &c., placed in a cooler room than the fruit room, so that I might keep them for a special occasion; but when looking over them in the first week in November they were found to be quite soft when touched, although to all appearance sound. Some fruits of Doyenné du Comice showed signs of decay at the base of the stalk, which I do not remember having noticed in this Pear before. I wondered whether the cool temperature, or the rather excessive application of manure in order to obtain fruits of an unusual size, were causes of this kind of decay. *T. H. Slade.*

1866—1901.—The death in quick succession of Mr. William Dodds, Mr. Charles Pilcher, and Mr. Geo. Thomson, reduces to quite a small number of living representatives, probably scarcely a dozen, of the 110 jurors who made the awards at the great International Horticultural Exhibition, held at South Kensington, in 1866. Mr. Dodds was then in charge of the gardens at Ashton Court, Bristol; Mr. Pilcher had charge of Mr. Sigismund Rucker's Orchids at West Hill, Wandsworth; and Mr. Thomson was growing fine specimen plants at Stansted Park, Emsworth, Hants. It is well to recall to mind memories of an exhibition so vast that 110 jurors were required to make the awards! Of those who organised and carried to such a successful issue this great show, those who exhibited, and those who

subscribed to its funds, how few remain! Were a roll-call made to-day, how small a number could respond! But a space of time of nearly thirty-five years may be said to comprehend two generations. Will Old England ever again witness an exhibition the like of that of 1866? *R. Dean.*

HIPPEASTRUMS IN THE WINTER.—Enclosed is a spike of *Amaryllis* bearing six blooms. I have had several dozen blooms through December, each bearing four and five flowers and two spikes on each plant. The plants were well ripened off in a cold frame through the summer months, and they commenced to throw up flower-spikes in October. Subsequently they were removed to a heated house. They are very useful at this season of the year, when bright bloom is rather scarce. *A. Bateman, Holdenby House Gardens, Northampton.*

LOBELIA TENUIOR.—I was pleased to see the nete and illustration of this fine *Lobelia* in the *Gardeners' Chronicle*, p. 46. It is not generally grown, but is worthy of extended cultivation, and will, when better known, be generally appreciated. I have grown the plant for three years for a variety of purposes with some success, but likewise with

after treatment will induce them to flower with freedom. One fault it has, if fault it be, i.e., the flowers roll up in a peculiar way and close during the night, which at times spoils them for being included in light arrangements of cut flowers. *J. Machar, Branwoods, Great Baddow, Chelmsford.*

NURSERYMEN AND THE ROYAL HORTICULTURAL SOCIETY.—For weeks past almost every gardening paper has had paragraphs, which conclude with the signature "A. D.," anent the nurseryman, and his unfitness to sit as a member of any committee of the Royal Horticultural Society. First it was the Fruit Committee, and how every nurseryman should be banished from this body, because, being in trade, they could not possibly have a mind open to fair judgment! We will not say anything about those members of this despised body, who have sat on the Fruit Committee for twenty years, often attending in the busy season at great inconvenience and loss, paying their own expenses, and without reward (saving a luncheon once a year), and some of whom are not even exhibitors. No, we will let their services speak for themselves. Again, we will not say anything about the propriety, or other-

Council, and shows that, with one exception—how kind of him to grant even this—there is no one on the Council who is fit to be the chairman of the Fruit Committee, and he suggests that the Fellows should select some members who are fit for the post, and put them in at the general meeting next month. We do not know if "A. D." is aspiring to be elected, but we should scarcely think so, for if he is not actually a member of the trade himself, his family connections in the business would almost render him unfit, from his own point of view. Anyway, we think those members of the maligned body of men known as nurserymen, who are Fellows of the Royal Horticultural Society, should endeavour to be present at the annual general meeting, and see what is going on. *Nurseryman.*

CORDYLIN INDIVISA AND C. BANKSII.—I think there can be but little doubt that the correct name of the handsome *Cordylina*, an illustration of which formed the Supplement to the number for January 19, is *Cordylina Banksii*, and not *C. indivisa*. I am, through the courtesy of Dr. Hamilton Ramsay, the fortunate possessor of the photograph reproduced in the Supplement, and had the opportunity of inspecting the plant in question during a visit to his beautiful garden last November. *Cordylina indivisa* is distinct in foliage, and still more so in flower from the subject of the illustration, and has, I believe, only blossomed once in the open air in Great Britain, this solitary instance having occurred in the spring of 1895, in Mr. Dorrien Smith's garden at Treco Abbey, St. Mary's Isle, Scilly, where I saw it in bloom. The foliage of the specimen, which had a clear stem, 3 to 4 feet in length, was fully 5 inches in breadth at its widest part, the sword-shaped leaves being about 4 feet long, and possessing mid-ribs of a deep red tint. The curious drooping flower-cluster, which hung pendent by the side of the stem, was composed of numerous closely-set bloom-spikes, yellow and blue-black in colour, formed of countless minute blossoms. Seed was saved from this plant, but I was informed during a later visit to the islands, that no seedlings true to the type had been reared. The plant had evidently suffered from being allowed to perfect seed, as it was in far less vigorous health than at the time of its flowering. I believe that there was at one time an example of this *Cordylina* in the late Mr. Crawford's garden at Lakelands, co. Cork; and at Trellisick, near Truro, there is a very wide-leaved *Cordylina* that is held to be *C. indivisa*, but whether this surmise is correct, or the reverse, can only be determined by the flowering of the plant. Having been one of the fortunate few to see the true *Cordylina indivisa* in flower, I at once recognised that Dr. Ramsay's plant belonged to a different species, and subsequently forwarded the photograph to Mr. W. E. Gumbleton, asking him what species he considered it to be. His reply was, that it was doubtless *C. Banksii*, an opinion afterwards confirmed at Glasnevin. It is practically identical with a larger plant of *Cordylina Banksii erythro-racis* at Trellisick, the only difference being that the latter has leaf-ribs of a darker red. As a flowering subject, *Cordylina Banksii* is far more ornamental than *C. indivisa*, the bloom panicles of the latter being more quaint than beautiful, though its broad, arching leaves render it a noble foliage plant. *S. W. Fitzherbert.*

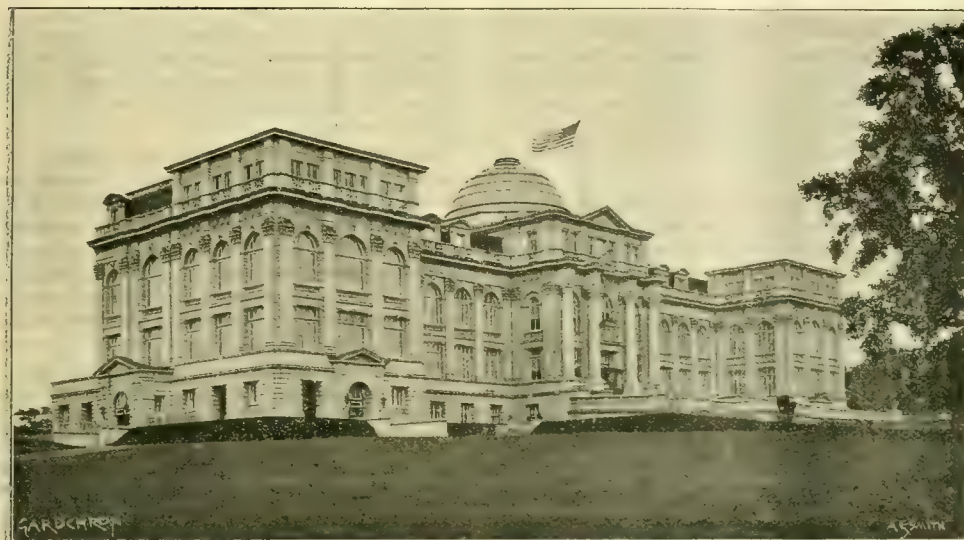


FIG. 25.—THE BOTANICAL MUSEUM, NEW YORK (SEE P. 60).

several failures. We have three or more varieties, the tall, erect one illustrated, which reaches a height of about 20 inches; an intermediate form of more compact and neater habit, reaching 12 inches to 15 inches in height. Then there is a variety of a trailing habit, which does not grow more than 6 or 8 inches in height, but will cover a space from 18 to 20 inches in diameter. All three have lovely flowers, some without the white eye, but all of a very bright and decided shade of blue. I tried the dwarfier forms for different uses in the flower-garden last season, as a carpeting amongst *Fuchsias* and other tall subjects, but I had not the success that I expected. The foliage being so sparse, the plant does not cover the ground so well as one could wish, although flowers are freely produced. Partial shade is beneficial to the plant, and above all it should be protected from rough winds. *Lobelia tenuior* is specially adapted for pot and basket culture, and when associated with *Gypsophila elegans* and light grasses, the effect is very pleasing. The seed should be sown early in an intermediate temperature, and grown on steadily without undue haste. The seedlings should be pricked off into boxes as soon as large enough to handle, having been slightly hardened off before the operation. About the middle of April transfer them from the boxes to a cold frame, affording a light porous soil, and let them grow on steadily and harden off, so that they may be safely planted out early in June, or potted as may be required. An excessive amount of water at the root should be guarded against. The plant should not be stopped at the points, as when that is done once or twice no

wise, of these insinuations emanating from a member of this very Committee, who, had he the slightest ground for his remarks, has the most ample opportunity of bringing his grievance before his own Committee, instead of trying to make believe that he is washing dirty linen in public. Nor, lastly, will we say anything of the sense of fitness which permits the editors of these papers to insert the paragraphs referred to, unless they think that there is cause of complaint against the trade in these matters. All this everyone can form his own judgment upon. But we would ask—in heaven's name, where would the Committee get to without these nurserymen? Amateurs and gardeners may and do know much, and may even, each in his way, surpass the nurseryman in some branch of horticultural knowledge; but for a general all-round grasp of the subject, commend us to the man who gains his living by cultivating fruit-trees, and who is daily in touch with these matters, and consulted in all difficulties, so that he is armed with the experience of others as well as his own. But what, we ask, happens when committees meet without nurserymen? Well, they give certificates to "Early Favourite" Plum, which, any nurseryman could have told them, had been out for forty years, and which had fruited on the average twice during that time. There, we shall say no more upon this point! Next, our friend, whose initials should surely have "C. R. I." between them, runs amok upon the Floral Committee, and explains why those rascally nurserymen are unfitted to judge or vote upon the merits of a *Dahlia*, and now he turns his attention to the members of the

DIAMOND JUBILEE GRAPE.—In the *Gardeners' Chronicle* for December 29 last, p. 480, we asked "Caledonicus" to prove his assertion that Black Morocco and Black Morocco Prince were the parents of the above Grape, or to apologise for making the assertion. Your correspondent replies in your last issue (January 19, p. 48) that as he never made the assertion, he is under no obligation to prove it. We give again his exact words, which appeared in the *Gardeners' Chronicle* of Dec. 15, in the article entitled "Pedigree Grape Vines, Old and New," he said: "Were any further facts needed to prove the need of a special committee, and a book of pedigree of Grape-vines, they may be found in the fact that the many letters written on the parentage of a recent novelty (Diamond Jubilee), with a striking resemblance to the Black Morocco and the Black Morocco Prince, and differing only in quality from both its parents." Here, on December 15, "Caledonicus" professes to know the parentage of Diamond Jubilee, for he says it differs only in quality from both its parents; and in your last issue, January 19, he professes to know nothing about the history or parentage of

this Grape, for he says: "What most of us are looking for is a true and unvarnished account of the history and origin of the Diamond Jubilee. Is it a chance or a pedigree seedling—a sport or what?" If he does not know its parentage, how does he know that it differs only in quality from both its parents? Your correspondent further says that he cannot understand the reticence maintained regarding the origin of this Grape. There has never been any secrecy in connection with this Grape on our part. We have willingly given its origin and parentage to all who asked for it; and we think more than one correspondent in the discussion that has taken place in your columns about this Grape has given its history and origin. If the origin and parentage of this Diamond Jubilee is such an important thing as some of your correspondents make out, is it not strange that the member of the Fruit Committee who started the discussion, and who has taken the most frequent part in it since, has not made this public, seeing that full particulars of its origin and parentage were placed before the Fruit Committee along with the bunch. If "Caledonicus" would apply there, or to "A. D.," he ought to get all the information needed; if not, we shall be most happy to supply him, though we are afraid this information would do little to extricate your correspondent from the quagmire of confusion into which he seems to have fallen over so simple a matter as a new seedling Grape. *D. & W. Buchanan, Forth Vineyard, January 21, 1901.*

— The discussion which has taken place in the *Gardeners' Chronicle* respecting the above Grape is of great interest to myself, as doubtless to all gardeners; and it cannot be controverted by any unbiassed person, that up to the present Messrs. D. & W. Buchanan have had the best of the contention. In the first place, Messrs. Buchanan grow Grapes on a very large scale, and it is only feasible, in fact it is only common sense, that those persons who are daily associated with a certain kind of fruit or flower should be possessed of better knowledge of those things than persons who only observe them at a show or when growing in somebody's garden. I saw Diamond Jubilee Grape at Shrewsbury show in 1899, and it appeared to me to be one of the finest black Grapes there, and it certainly had not the appearance of what was shown as Black Morocco, on December 4, at the Royal Horticultural Society's meeting at the Drill Hall, but which seemed to me more like a Red than a Black Morocco. "Caledonicus," in a recent issue of the *Gard. Chron.*, states that the parentage of Diamond Jubilee is Black Morocco and Black Morocco Prince. I do not agree with him. If I were asked to give the pedigree of Diamond Jubilee, I should from what I saw of the Grape at Shrewsbury, say that its parents are either Black Alicante, Lady Downes, or Gros Colmar. How the cross was obtained I know not, but I should say it has been obtained by a cross from two of the three Grapes mentioned. Despite what the result of the arguments respecting its pedigree might be, Messrs. Buchanan have the consolation of knowing that they have introduced a Grape which is a credit to them, which has been certificated by eminent Grape-growers, members of the Royal Caledonian Society, and whose decision will doubtless meet with approval as time goes on, whilst that of the members of the Fruit Committee of the Royal Horticultural Society of 1900 will be forgotten. *A Fellow of the R.H.S.*

NURSERY NOTES.

"SPECIALTIES" AT READING.

QUITE a month before the Old Year 1900 had been elbowing into the past by its successor, Messrs. Sutton & Sons' Chinese Primulas had commenced to yield a show of flowers that has since become a beautiful and abundant display.

Whilst all must admire these Primulas, from the fact that they contribute towards a spectacular effect that few things other than flowers could equal, we were most attracted, on the occasion of a recent visit to Reading, by comparing and contrasting the many varieties with and against each other. By such means is an appreciation obtained of the modifications in the habits of the plants and in the

colours of the flowers that have been brought about in Messrs. Suttons' establishment by the carrying out of the processes of cultivation, cross-fertilisation, and selection.

Many readers of the *Gardeners' Chronicle* (the older ones especially) are familiar with the chief characteristics of the wild form of this species, and remember that its petals forming the very small, light pink-coloured corolla, show no trace of fimbriation, other than a wedge-like cleft in the centre of each. But any reader who wishes to compare the florist's Primula of to-day with the type that exists in Chinese gardens, may look up their old volumes, and in the *Gardeners' Chronicle* for January 26, 1889, p. 116, will be found drawings of a wild specimen, and of a cultivated specimen that had "reverted" very nearly to the characteristics of the wild one, besides a very great deal of exact information concerning the species, and descriptive of the varieties as they were observed in Messrs. Suttons' nursery twelve years ago. There has been ceaseless work since then.

Such a strain as Messrs. Sutton have now, being an exceedingly artificial one, necessitates the exercise of considerable vigilance, and persistent "selection" to maintain it even to its present condition; but more than this is attempted, and much has been done since the date quoted above. Greater distinctness and brilliancy in the flowers have been obtained, new shades of colour, more abundant fimbriation in the petals, greater diversity in the form of the foliage; and many "colour" varieties possess Fern-like leaves now, that formerly had normal leaves only.

The habit of the plants, judged from a decorative point of view, has also to be constantly borne in mind; the leaf petioles should be rather short than long, and the leaves should develop in such a manner that the trusses of flower will rise above them, and thus be displayed to the fullest extent. Then there are minor peculiarities, such as early or late flowering, comparative persistence in the flowers themselves, special tendency to a robust habit of growth, or to unusual freedom in the matter of blooming. These are characteristics that it may be judged expedient to preserve and encourage, and further efforts may be made to impart such characteristics to other varieties. In the first case the work can be done by "selection," which implies rejection on the part of the seed sower of those plants that appear weak in the particular tendency it is desired to encourage. In the second instance, where it is attempted to convey the tendency to other varieties, the work, if done at all, must be brought about by cross-fertilisation, which is sexual union. Primulas are not so large as some florists' flowers, in which size in the individual blooms has become something to discourage rather than admire. In Primulas, other conditions being equal, those varieties with large flowers are adjudged the best, and in this respect, whilst the largest flowers observed at Reading by the writer in the *Gardeners' Chronicle* in 1889 had corollas "nearly 2 inches across," the largest measured a week or so ago was $2\frac{1}{2}$ inches across. It may be pointed out here, that when a variety has been developed in any particular respect other than the colour of the flower, it does not always happen that a new name is given the strain. "White King," we will suppose, is a name the firm has used, and will use for the best variety with single white flowers; but in a particular season, perhaps the stock has been quite replaced by a new one, hardly distinguishable from the other, but nevertheless possessing a quality that those who work and live amongst the plants continually consider to be a desirable improvement. Therefore there is progression sometimes in the matter of an individual variety, the name of which, possibly, was catalogued twelve years ago and is offered to-day.

It is an interesting fact that varieties with much-lobed, irregular, or Fern-like foliage exhibit a similar increased irregularity in the petals of the

flower, which appear just a little less in size, and are more cristate and irregular in outline.

There are many houses at Reading filled with plants in flower, some of which are already in the early stages of seed-bearing, and the "Giants," being later bloomers than the others, are now most noticeable. The varieties are not very numerous, because distinctness is estimated at its proper value.

Among those that produce single flowers are included Crimson King, of which there is a new form having "fern" leaves; Sutton's Blue, Reading Blue, Cambridge Blue (a newer variety with very delicate appearance), Brilliant Ruby, Reading Pink, Reading Scarlet, Brilliant Rose, Rosy Queen; and the following with white flowers: Snowdrift (very early), Purity, Royal White, Pearl, and Improved White, a novelty with Fern foliage.

Of the larger strain known as "giant," owing to the larger leaves and flowers they produce; there are "Pink," "White," "Crimson," and "Terra Cotta." But the last-mentioned name, though used by the firm, is by no means descriptive of the colour of the flowers, which is carmine.

Then there are double-flowered varieties to name, and that come perfectly true from seed in such colours as pink, scarlet, crimson, carmine, white, blue, salmon, and Carnation-flaked. These double Primulas are deservedly popular in gardens, being robust-growing plants, very free-flowering, and the flowers are of good size and substance, and of clear and rich colours.

It is unnecessary to describe the single or double varieties here in greater detail, because such information is given in the firm's catalogue, and we have a suspicion also, that a large number of gardeners who read descriptions of each variety send afterwards an order for "mixed" seed. As the "mixed" seed contains the very best varieties, and some that as yet cannot be obtained to name, the practice has much to recommend it.

The "Star" primulas have during the past few years won their way into the affections of almost all who have admiration for the florists' type. Quite distinct from the latter in habit, they have a decorative value due to a more graceful appearance and to greater abundance of flower; their inflorescence, often more than a foot in height, of pyramidal form, and branching freely, supports a wonderful show of the stellate blossoms, the petals of which have the single notch already alluded to as characteristic of the original type. This strain may be made more like the florists' type, or with greater similarity to the wild Primula, by repeatedly cross-fertilising in one or the other direction, and since these plants have been shown so much favour the question arises as to what proportions should the characteristics of each type be blended to produce the best form. Messrs. Suttons' method in this matter is no doubt a good one. They are glad to get increased size and varied colours in the stellate varieties, so far as these qualities can be obtained without causing the petals to become in the least degree fimbriated. The latest development of this strain has been in the matter of colour, and "Primula blue" or lavender has already been secured. Mont Blanc, with very dark coloured foliage, and White Queen, are beautiful varieties, having white flowers.

NEWER VARIETIES.

Although some of these are not ready for distribution yet, and have at present therefore only an interest for the gardener, with a promise of value in the future, a reference to "The Duchess" must not be omitted. This beautiful single Primula, which was figured and fully described in the *Gardeners' Chronicle* for February 3, 1900, p. 67, is being propagated by seed as quickly as possible. The few plants that we noticed last year have been succeeded by a batch of about eight dozen, and these being in bloom, it was gratifying to notice how remarkably true each plant had

proved. General French is the new crimson double variety, given an Award of Merit by the Royal Horticultural Society on January 9 last year. A new strain of double varieties has resulted from crossing Carnation Flaked again with Crimson King; the new varieties have flowers spotted rather than flaked, and the spotting is so thick, and individually so small, that the strain is very distinct, and will be likely to gain a share of admiration. There is another novelty: it has single flowers of true florist's form, colour rich, clear rose with white centre, each bloom $2\frac{1}{2}$ inches across—this is a truly superb variety.

It was interesting to hear from Messrs. Suttons' cultivator that the whole of the Primulas, which together showed so many stages of development, had been raised from seed sown at nearly the same time, between June 15 and June 18.

With such early and late-flowering varieties, there is not the same need to sow successional batches. The show lasts all through the winter, from the end of November until April, and the cultivation of the plants extends only for a period of seven months. Many gardeners who do not succeed so perfectly as they could wish in the culture of Primulas should visit Messrs. Suttons' or a similar nursery, and observe the kind of houses and general conditions in which the plants are developed to the fullest degree of which they are capable. We say this, notwithstanding that a few days ago in turning over the leaves of a periodical published about seventy years ago, we noticed that a writer was expressing surprise that some one should have given in the previous number information respecting the cultivation of the Chinese Primula, adding that he thought the details were well understood by all. This was about ten years after the introduction of the species to Britain! Could the writer of that remark see a show of Primulas to-day, possibly he would concede that even he had left something to be discovered by his successors.

THE CYCLAMENS

formed another of the Reading specialties in bloom, but we must be very brief in our remarks concerning them, glorious though they were. Like sheets of snow were the great batches of Giant White and Butterfly, but they are both well known varieties, and while the former is admired for its stately form, upright petals, some of which were measured and were $2\frac{1}{2}$ inches long and $1\frac{1}{4}$ inches wide; the latter with its more spreading character, the petals almost resembling the wings of a butterfly, is just as popular. We always admire Salmon Queen for its distinct shade of colour, and Vulcan is a rich crimson variety quite unsurpassed in its colour. There will soon be "giant" forms of these two varieties, it is hoped, as there are of most other colours, such as pink, Cherry-red, purple, rose, &c. The "papilio" strain is cultivated, and some of the varieties of the normal type are remarkable for possessing a pleasing fragrance. R. P. H.

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

JANUARY 15.—Present: Dr. M. T. Masters (in the Chair), Mr. Bowles, Mr. Michael, Rev. W. Wilks, Mr. A. Sutton, Mr. Im Thurn, Mr. Hudson, and Rev. G. Henslow, Hon. Sec.

Loss of Reserve Matter in Pruning.—The following communication on pruning Vines was received from Mr. Thomas Sharpe, Westbury, Wilts:—"The method in vogue of managing the growth and subsequent pruning of Vines appears to result in considerable loss of reserve matter. Physiology teaches that the compounds elaborated in the leaves, after necessary supplies are made to current growth and fruit, are stored for future use. Some of these are stored for the use of buds on the shoot the following spring. No. 1, the lowest or basal bud, is required for the fruiting lateral next season; but No. 2, the next, and onwards, are not, and are therefore cut off at pruning-time, resulting in the loss of all the reserve matter stored in the shoot above No. 1. If I understand aright, every living cell of a plant is a perfect entity, though the connecting strands of protoplasm may

manifest a quasi symbiosis, the supreme object of which is perpetuation either sexually or vegetatively as environment may render exigent. A mole, a rat, a rabbit, or even a toad may burrow under a Strawberry plant in summer, destroying more or less of the roots. The plant, deprived of a full supply of sustenance, becomes a suitable host for red-spider, which makes its wonted havoc. The plant in consequence makes but miserable growth in August and September. The flowers of this plant next season will be small, but the pollen abundant, the growth of the tori stunted, but it may bear a mass of seeds. Again, a healthy Blenheim Apple-tree attracts attention, the owner having arranged a manure heap in such a position that the liquid from it will keep the Blenheim over-supplied. Result: More growth the first season, but a diminishing growth afterwards for a few years, then two heavy crops of wretched fruit, all core and seeds. In these two instances of untoward environment the plants have adapted themselves by concentrating all their stamina to seed production. Can we turn such adaptations to account by the prevention of preparation for vegetative perpetuation above No. 1 bud in the Vine growth? Acting upon these thoughts, I disbudded my laterals above No. 1 last July. Apart from really satisfactory appearance, the Hamburgs exhibited no striking developments near the spurs, but the Muscat shows protuberances at the bases of the spurs, and these are quite conspicuous on that part of the rod which is four years old."



FIG. 26.—ADIES PINAFO.

(Planted at Osborne by Queen Victoria, May 24, 1849, on the anniversary of her Birthday.)

Mr. HUDSON observed that it is always the basal bud which is used for stock purposes, as the eyes or buds are inferior in strength from below upwards along the lateral shoots. The basal bud always gives the most compact bunches of Grapes, the others supplying looser ones. He added that no pruning should be done until all the leaves had fallen. If the reserve material be contained in the shoot above the basal bud, and it be suggested by Mr. Sharpe that this could be utilised, then every bud must be suppressed except the basal. Experiments would show by comparison with those in which the lateral had been pruned down to the basal buds, whether the Grapes showed any superiority. It is hoped that Mr. Sharpe would continue his experiments, and record comparative results.

Injured Peach-shoots.—Mr. JAMES HAWKES, of Osterley Park Gardens, Isleworth, sent shoots with the following remarks:—"During the past two seasons, about the time the house is closed for forcing, a great many of the young shoots of Royal George (age of tree twelve years, growing in an early Peach-house, and ripens end of June) have black rings round them, and from the buds small globules of gum exude. The tree in question has cropped well, has plenty of fibrous roots, and the growth is not over-strong. It has not been subjected to high or extremes of temperature, and is well supplied with water, nor has it been overed with manure."

The specimens were sent to Dr. W. G. Smith for examination and report.

Climbing Cactus.—Dr. MASTERS exhibited photographs of a spirally-climbing Cactus having a flattened stem, and spines, proceeding from the edges. It was probably a species of *Phyllocactus* from Brazil. The photographs

were received from Dr. Schumann of Berlin. Mr. F. Im Thurn observed how *Cereus* in Guiana at first grows flat against a support, but when it grows freely above, assumes a more cylindrical character. It would seem, therefore, to be one of Kerner's so-called "leaning" climbers, often forming a lattice-work by intersection of their shoots, if it have no adhesive roots such as some species of *Cereus* possess. Mr. Henslow observed that the change of form is probably correlated with a different distribution of the mechanical or supporting tissue, for he finds that an Ivy-shoot when supported has more pith and less wood than one of the same diameter but growing freely in the air, in which the proportions of wood and pith are reversed.

Carnations, single and double, on one plant.—A drawing was received from Mr. WILLIAM CUMBERSON illustrating this not uncommon occurrence. Mr. Michael, Mr. Sutton, and Dr. Masters, had observed similar cases, as in *Begonias* also, especially late in the season. An analogous occurrence is seen in *Clematis proteus*, which bears double flowers early in the season, but single ones afterwards. In all cases it appears to be due to a check in nutrition.

Pinus cone.—Dr. MASTERS exhibited a fine cone, received from Sir Ch. Strickland, of *Pinus ponderosa* var. *Benthiana*. It is a native of California.

Mistletoe variety.—Mr. CORDEROV of Didcot sent a bough of Mistletoe bearing longer and broader leaves than those of the usual wild form. It was believed to have been cut from an Apple-tree. It was observed that the variety arose from some innate cause, but, of course, traceable to its parasitism, and that as Apples vary by the change of their environment, so the Mistletoe is similarly affected.

Australian Rhubarb.—Mr. SUTTON called attention to a variety of Rhubarb from Australia, grown at Reading for some few years. It starts into growth every year in November, producing leaves with stalks 2 feet long and three-quarters of an inch in diameter, of a scarlet colour. Unfortunately, in this climate it can only be depended upon during a mild season, the late frosts having destroyed it. As Rhubarb is a native of N.E. Asia, it had apparently quite changed its habit in Australia, where the seasons are reversed; but has for the present retained its period of leafing which it acquired in the S. hemisphere.

Clavaria, rare.—Mr. BUNYARD sent a plant growing on Pine wood in a cellar. It is snow-white, much branching, with pointed ends. Dr. M. C. Cooke reports that it is the rare species *C. Krombholzii*.

LINNEAN.

DECEMBER 20.—Prof. S. H. VINES, M.A., F.R.S., President, in the chair.

On behalf of Dr. J. W. CORNWALL, F.L.S., the Secretary exhibited two photographs of a compound flower which appeared on a white Foxglove growing in a garden near Godalming.

Mr. B. DAYDON JACKSON exhibited two editions of Hill's *Flora Britannica*, the earlier, of 1759, being apparently unknown to bibliographers. This edition differs from the usual issue of 1760 in having a different title-page, and publisher's name; the copy exhibited wants the plates mentioned on the title. The species ascribed to the genus *Statice* are three in number; in modern nomenclature one species of *Ammeria* and two of *Statice*.

Prof. HOWES, F.R.S., exhibited a couple of pigeon's egg-shells, cast up at the mouth by the tropical African egg-eating snake, *Dasypeltis scabra*, now living in the Zoological Society's Gardens, and called attention to the presence of a series of spiral and longitudinal fracture-lines, pointing to an elaborate co-ordinate muscular activity in the "crushing" process, the probable nature of which he discussed, in the light of the recent investigations of Katheriner into the anatomy of the animal and the observations of Miss Durham upon its feeding habits.

Prof. POULTON, F.R.S., exhibited a living specimen of the Death's-head Moth (*Acherontia atropos*), and proved with a stethoscope that the late Prof. Moseley was correct in stating that the sound comes from the proboscis. He also showed that all sound ceased the moment the tip of the straightened proboscis was dipped in water, and could not be resumed until the organ was withdrawn; thus supporting Prof. Moseley's opinion that the sound was produced by forcing air through the proboscis.

Prof. POULTON also exhibited projected photographs of *Acraea unicolor* var. *alcippina* recently received from Sierra Leone by Mr. Herbert Druce, F.L.S.

Mr. ARNOLD T. WATSON, F.L.S., read a paper on the Structure and habits of the Ammonocharidae, a group of marine Polychete worms which inhabit sandy localities and are protected by tubes of unique structure.

Mr. I. H. BURKILL, F.L.S., read a paper on the Flora of Vavau, a little-known island of the Tonga group, on which some remarks were made by the President.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

JANUARY 10.—The severe weather prevailing all over England on the 9th inst. had a prejudicial effect on the meeting held on this date. The Society has a rule, however, by which, if the committee decide that when the weather is of such a nature as to be injurious to plants, cut blooms may be submitted under the ordinary declaration of ownership.

O. O. WRIGHT, Esq., Bridge Hall, Bury (ex Mr. Rogers), made a charming display of cut blooms, principally of *Cypripediums*. The collection consisted principally of hybrids,

including some of great merit. *Cypripedium insigne* var. *Luciani* was shown, and was dealt with in the same manner as previous exhibits of the same variety; and an Award of Merit was made to *Cypripedium* × *Fascinator*, and a Vote of Thanks for the cut flowers.

A. Z. LEES, Esq., Stretford (gr., Mr. Thompson), sent a plant of *Cypripedium Boxalli* var. *atratum*. T. BAXTER, Esq., Morecambe (gr., Mr. Roberts), staged a number of excellent *Odontoglossums*—O. × *Loochristense*, "Baxter's var.," being an exceptionally good thing; it is really difficult to draw the line between this and a beautiful yellow variety of O. *crispum*, with large pale brown blotches. It is a hybrid which turned up among a number of imported O. *crispum*—First-class Certificate. O. *Adriane* var. *Robertsonianum* likewise received a well-deserved First-class Certificate. This is an intensely beautiful flower, of perfect symmetry, and possessing dense, rich crimson-brown markings. O. *crispum* var. *Caubrian* was a beautiful, chaste form with fine flowers.

T. STATTER, Esq., Stand Hall, Whitefield (gr., Mr. Johnson), exhibited *Cypripedium Lceanum magnificum* and C. *insigne Sanderianum* (both previously certificated). The best subject was the *Lecia anceps* var. *alba*, Bull's variety. I have seen a few so-called Bull's varieties, but this is far away from any which I have previously observed, and is an acquisition. A First-class Certificate was awarded the variety, and a Vote of Thanks for the group.

HERBERT PARTINGTON, Esq., Glossop (gr., Mr. Campbell), exhibited a few *Odontoglossums*. Mr. JOHN ROBSON, Altrincham, had a very handsome variety of *Odontoglossum* × *Loochristense* called *aureum*, which received a First-class Certificate. Mr. A. J. KEELING, Cottingley, Bingley, Yorkshire, showed a plant of *Cypripedium nitens*.

Messrs. HUGH LOW & Co., Bush Hill Park, Enfield, exhibited a number of fine *Cypripediums*, a beautiful form of C. *nitens magnificum* receiving a First-class Certificate; and C. × *Leonidas* received an Award of Merit. P. W.

ROYAL BOTANICAL AND HORTICULTURAL OF MANCHESTER AND THE NORTHERN COUNTIES.*

THE Council of the Society have pleasure in handing their annual Report to the proprietors herewith, and it is pleasing to note that the year 1900 has been favourable for the Society. When the fact is taken into consideration that for the last twelve years the Society has carried on its work at a loss varying annually from £500 to nearly £1600 in some cases (this is leaving out of account the year 1892, when the sum of £3000 was received from "Old America, Ltd.," for the use of the Gardens, which sum reduced the Society's liabilities in that year to the extent of £2808, the result of the past year cannot be regarded otherwise than with satisfaction, the financial statement showing a surplus of £188 6s. 6d. This is a happy termination of the nineteenth century for the Society, which has seen nearly seventy-five years of it both prosperous and otherwise.

The Council hope that the turning point in the Society's fortunes has been reached, and there is every reason to believe that the Society will not only pay its way year by year, but will do some little towards the extinction of its only debt, viz., the Bank overdraft. The work of the Society has been as active as usual, and the Council have great pleasure in recording the interest which the public generally of Manchester and Salford and surrounding large towns have taken in the horticultural exhibitions promoted by the Society.

A word as to these Exhibitions: The Society promotes a Spring Flower Show, which is always very attractive. The Great Whitsuntide Exhibition at the Gardens in Whit-week is too old an institution to need description here; the past year saw this exhibition up to its usual standard of excellence. The Rose Show, in July, was one of the most delightful exhibitions of its kind held in England, and was well patronised by the public; and the last fixture in the Society's list, the Chrysanthemum Show, has put our city in the foreground for exhibitions of this most popular flower, rightly called "The Autumn Queen." The Chrysanthemum Show of 1900 deserves to be recorded in the Society's history, as the Council feel sure that, as its beauty and popularity becomes known, it may become the most important and successful of the Society's fixtures.

Another satisfactory feature of the Report for 1900 is in the increase of annual subscriptions, an increase which is being steadily maintained, and which the Council hope will continue.

The present rates of subscription are very low, and when it is generally known that all the resident members of a family can have season tickets which admit to the Gardens every day in the year, and to all the Society's fixtures, for the sum of £2 2s. per annum, while individual tickets are issued for 10s. 6d. per annum, the Council feel sure there will be a large accession of new subscribers.

In accordance with the resolution passed by the proprietors at the annual general meeting, on January 25, 1900, the Council took steps to effect this sale, and they have pleasure in now reporting to the proprietors that a plot of land consisting of 4,000 yards running parallel with the Deaf and Dumb Institution was conveyed to the Committee of the latter Institution on December 31, 1900, for the sum of £2,856, subject to an apportioned chief rent of £6 payable to Sir Humphrey F. de Trafford.

* Extracts from the Report of the Council to the Seventy-third Annual Meeting of Proprietors, held in The Lord Mayor's Parlour, Town Hall, Manchester, on Thursday, January 24.

The effect of this sale will be to reduce the Society's liabilities by £2,856, less law charges, and it will further assist the Council in their work by effecting a substantial reduction in the amount of bank interest paid by the Society. This interest in 1900 amounted to £373.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

THE executive and a number of friends of this estimable Institution, for affording relief to gardeners and their widows in their old age, held the sixty-second annual meeting at "Simpsons," 101, Strand, London, W.C., on Tuesday afternoon, January 22, for the purpose of receiving the report of the Committee, and the accounts of the Institution (as audited) for the year 1900; electing officers for the year 1901, and for the purpose of placing seventeen pensioners on the funds. Of this number, seven having complied with the regulations, were, on the recommendation of the Committee, placed on the funds without the trouble or expense of an election; viz., Isaac Clark, Wm. Cotton, W. Craggs, John Eastwood, Thos. Gale, Elizabeth Harris, and Samuel Morris. During the year 1900, the following widows of pensioners have been put on the funds, viz., Maria Webb, Sarah Dey, Elizabeth Wood, Mary A. Goldsmith, and Sarah Smith. The twelve persons who were so fortunate as to obtain the highest number of votes, were, Agnes Wright, 7916; William Smith, 6209; Thomas Tyler, 5208; George Wills, 4975; James Thatcher, 4671; John Gibbons, 4604; Cecilia Kent, 4228; Elizabeth Hackwell, 4190; William Tillery, 3961; Samuel Mills, 3937; James Finch, 3486; and William Moore, 2003. The asterisk denotes gardeners who have not contributed to the Institution.

The disbursements of the Institution in 1900 for annuities only, amounted to £1,960, in pensions of £20 to ninety-eight men, and £1,296 in pensions of £16 to eighty-one widows. Besides the pensions, which are for life, gratuities have been given in exceptional cases, and during the year 1900 the sum of £99 from the "Victorian Era Fund" has been distributed amongst candidates who are awaiting election; also gratuities from the "Good Samaritan Fund."

The business of the evening was succeeded by a friendly supper, and was to have been enlivened by speeches, music, &c., but about 7 p.m., the sad news of the Queen's death was announced by the Chairman, Alderman PIPER, of Worthing and the company very shortly afterwards dispersed.

The financial condition of the Institution is quite satisfactory, although an augmentation of its funds is a pressing necessity in view of the great number of applications made on its bounty.

BARNSELY CHRYSANTHEMUM.

THANKS to the earnest and cheerfully given labour of the members of this now well-established Society, the cultivation of the Chrysanthemum has seen much progress in South Yorkshire of late years, and the annual exhibition, which perhaps was once looked upon as the pet of a few faddists, is now the meeting of a large number of enthusiastic votaries.

The Society held its fourteenth annual meeting on Monday evening, when there was a very large attendance under the chairmanship of Mr. W. Robinson. Mr. W. B. Armitage, the energetic and popular Secretary, reported that there was a profit of £3 16s. 8d. on the last show, and there now stood a credit balance at the bank of £29 10s. 1d. Expenses were cut down so low, and so much voluntary work was forthcoming, that nearly all the money available was awarded in prizes, and close upon £100 was spent in this direction last year. The open groups and vase classes, in which good prizes and the National Society's certificates were offered, were exceptionally good, while the gift of a twelve-guinea challenge cup for local competition had done much to encourage local cultivators. The next show was fixed for November 14 and 15, and Messrs. J. P. Leadbeater, of Tranby Croft, and W. Tunnington, Calderstone, Liverpool, who gave so great satisfaction as judges, will be asked to again officiate in that capacity.

READING & DISTRICT GARDENERS MUTUAL IMPROVEMENT.

JANUARY 14.—The first fortnightly meeting of 1901 was held in the Club Room on the above date, when the President Mr. L. G. SUTTON, presided over a good attendance of members.

The subject arranged for discussion was, "A few Useful Plants for the Stove and Greenhouse," and this was dealt with in a practical manner by Mr. W. P. BOUND, gr., Gatton Park, Reigate. The plants touched upon were *Anthuriums*, *Poinsettias*, *Euphorbias*, winter-flowering *Begonias*, *Acalypha Sanderiana*, *Streptocarpus*, &c. A discussion followed on these plants, and also respecting *Eucharis*, *Tuberose*, *Clerodendron*, &c. A hearty vote of thanks was accorded Mr. Bound for his paper.

Mr. TOWNSEND, of Sandhurst Lodge, staged various varieties of winter-flowering *Begonias*, *Eranthemum pulchellum*, *Centropogon Lucianus*, *Browallia macrantha*, *Justicia*; and Mr. BOUND showed *Anthuriums*, *Euphorbias*, *Begonias*, and *Acalypha Sanderiana*.

On Monday, January 21, the annual tea and entertainment was held in the Abbey Hall, and proved a great success. Mr. SUTTON briefly addressed the gathering. The tables were

decorated with *Cyclamen*, &c., by Messrs. SUTTON & SONS. After tea an entertainment took place to which friends of the members were invited. The invitation was readily accepted, some 600 spending a very pleasant evening. The programme consisted of animated pictures and limelight views by Professor Lewis, and humorous songs and sketches by Mr. Ben Lawes.

CROYDON AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT.

JANUARY 15.—The first annual meeting of the Society was held at the Sunflower Temperance Hotel, George Street, Croydon, over eighty members being present.

The committee presented their report and balance-sheet for the past year, showing a balance of 19s. 4d. on the right side; these were confirmed and adopted. The members then proceeded with the election of officers and committee for this year. President, Frank Lloyd, Esq., Coombe House; Vice-Presidents, F. W. Burbridge, M.A., Trinity College Garden, Dublin; C. H. Walker, Esq., Falkland Park; and F. A. English, gr., Addington Park.

The Secretary suggested that every possible encouragement should be given to young gardeners, with the result that six members offered to give prizes for essays on horticultural subjects, which announcement was received with much approval by those present.

Mr. Boshier proposed, and Mr. E. Kromer seconded, that a dinner, followed by a social evening, should be held in February, and a sub-committee was appointed to make the necessary arrangements.

Votes of thanks to the officers and committee brought the meeting to a close.

WARGRAVE GARDENERS'.

JANUARY 16.—The annual meeting took place on the above date; Mr. W. H. Scott in the Chair. The Committee and officers for 1901 were elected. The Hon. Secretary presented his report, and the Hon. Treasurer gave an account of the finances, which showed a good balance in hand. Both report and balance sheet were unanimously adopted. The prizes, medals, and certificates won during 1900 were presented, after which Mr. G. Hatch, gr. to Sir John Edwards-Moss, Bart., read his 1st prize essay on "The best Means of Furnishing a Supply of Vegetables all the Year Round." The exhibits included good groups of *Begonia Gloire de Lorraine*, and *Freesias*, *Celeriac*, and a specimen plant of *Davallia canariensis*. H. Coleby Hon. Sec.

CHESTER PAXTON.

THE usual fortnightly meeting was held in the Grosvenor Museum on Saturday, when Mr. W. Neild, F.R.H.S., instructor in practical horticulture at the Holmes Chapel College, Cheshire, read a paper entitled "Manures, Organic and Inorganic, Special and General, and their Effects upon Crops." The lecturer proved to be an able exponent of the all-important question of manures, and much useful information was gained by those members who were present. Mr. Robt. Wakefield, gardener at Newton Hall, who presided, led off an animated discussion, at the close of which the lecturer was, on the initiative of Mr. John Taylor, accorded a hearty vote of thanks.

BOLTON HORTICULTURAL AND CHRYSANTHEMUM.

THE annual business meeting of this flourishing Bolton floral society has just been held, following upon the recent show. Mr. R. Smith was appointed Chairman for the ensuing year, and for the eleventh time in succession; and the committee was elected as follows: Messrs. Pawson, Cross, Barclay, Nelson, Merrill, Sutcliffe, Eastwood, Stone, Horrocks, Farnworth, and Abbott. The past year was reported to have been very satisfactory, the balance-sheet showing an increase on the previous twelve months' working of £23. Thanks were accorded to the officials, and to Mrs. Jacques, sister of the late president (Miss Mabel Cross), who had greatly interested herself in the Society's operations. As the Town Hall, spacious though it is, proved insufficiently large for the last show it was resolved to hold the next one in the Artillery Drill Hall, the dates being November 15 and 16.

DEVON AND EXETER GARDENERS' ASSOCIATION.

THE following papers will be delivered during the spring, and it will be seen that while the subjects are varied and interesting, those dealing with them are well qualified by experience to speak on such matters. The meetings are held in the committee-room of the Guildhall at 8 p.m. prompt.

SESSION 1900-1901.

Wednesday, January 30, Mr. JOHN COUTTS, gr. to Sir THOS. ACLAND, Bart., Killerton—Subject: "Greenhouse Hard-wooded Plants." Wednesday, February 13, Mr. W. R. BAKER, gr. to Lady DUCKWORTH, Knightleys—Subject: "Notes on the Growing of the best dozen kinds of Vegetables for Exhibition." Wednesday, February 27, Mr. F. J. FLETCHER, gr. to Col. HALFORD-THOMPSON, J.P., Teignmouth—Subject:

"Hardy Fruit-growing for Devonshire." Wednesday Mar. 13, Mr. JAMES MAYNE, gr. to the Hon. MARK ROLLE, Bicton—Subject: "Methods of Propagation." Wednesday, Mar. 27, Mr. R. W. HODDER, gr. to Mrs. TREVOR-BARCLAY, Torquay—Subject: "Is Gardening a Science?" Wednesday, April 10, Mr. G. H. HEAD, Assistant Gardener at Poltimore Park—Subject: "The Treatment of Cool Orchids."

President, E. A. SANDERS, Esq., J.P.; Honorary Secretary, Mr. A. HOPE; Honorary Treasurer, Mr. W. MACKAY.

MRS. TURNER.—Whilst the QUEEN was lying on her death bed, the prayers of the worshippers at Upton Church, Slough, were asked also for the widow of CHARLES TURNER, of the Royal Exotic Nursery, Slough. Mrs. TURNER was born in the same year as the QUEEN, and was suffering in the same manner.

MARKETS.

COVENT GARDEN, JANUARY 24.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantums, p. doz.	5 0-7 0	Ferns, small, per	100
Arbor-vitæ, var., doz.	6 0-36 0	100	4 0-6 0
Aspidistræ, p. doz.	18 0-36 0	Ficus elastica, each	16-7 6
— specimen, each	5 0-10 6	Foliage plants, var.,	
Cannas, per doz.	18 0—	each	1 0-5 0
Crotons, per doz.	18 0-30 0	Lily of Valley, each	19-3 0
Cyclamen, per doz.	8 0-10 0	Lycopodiums, per	
Dracenas, var., per		doren	3 0-4 0
dozen	12 0-30 0	Marguerites, per	8 0-12 0
— viridis, per doz.	9 0-18 0	dozen	8 0-9 0
Ecasas, var., per doz.	12 0-36 0	Myrtles, per dozen	6 0-9 0
Econymus, various,		Palms, various, ea.	1 0-15 0
per dozen	6 0-18 0	specimens, each	21 0-38 0
Evergreens, var.,		Pelargoniums, scar-	
per dozen	4 0-18 0	let, per dozen	8 0-12 0
Ferns, in variety,		— Iryleaf, per doz.	8 0-10 0
per dozen	4 0-18 0	Spiræas, per dozen	6 0-12 0

VEGETABLES.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe,		Hors radish, for-	
per doz	3 6-4 0	eign, per bunch	0 9-1 0
— Jerusalem, sieve	0 9-1 0	— loose, per doz.	1 9—
— Stachys or		Leks, per dozen	1 6—
Chinese, per lb.	0 4½—	bunches	1 6—
Asparagus Sprue	0 7—	— Lettuce, French	
— Paris Green, bun.	3 0—	Cabbage, doz.	0 8—
— home grown,		Mint, per doz.	4 0—
bun.	7 0-8 0	bunches, new	4 0—
Beans, dwf. Madeira,		Mushrooms, house,	
per bkt.	2 0-2 6	per lb.	0 10—
— Ch. Islds. and		Onions, picklers,	
home, dwf.,		per sieve	2 0-3 0
new, per lb.	2 0—	— per bag	3 0-4 6
Barb de Capucine	0 4—	— cases	8 6-9 0
Beans, French, pkts.	0 5-0 6	— English, p. cwt.	
Betroot, bushel	1 3-1 6	bag	4 6-5 0
Beet, per dozen	0 6—	Parsley, 12 bunches	1 0-2 0
Broccoli Sprouts,		— per sieve	0 9-1 0
bushel	1 0-1 3	Parsnips, in cwt.	
Brussel Sprouts, per		bags	2 0-2 6
sieve	0 6-1 0	Potatoes, per ton	75 0-130 0
Cabbage, tally	1 6-2 0	— New, per cwt.	12 0-16 0
— dozen	0 6—	Radishes, per 12	
Carrots, 12 bunches	2 0—	bunches	1 0-1 4
— washed, in cwt.		Rhubarb, Yorks, doz	1 0-1 3
bags	2 0-2 6	Salad, small, pun-	
Cauliflowers, per		nets, per dozen	1 3—
doren	1 0-2 0	Savoy, per doz.	0 6-1 0
— crate	6 0-8 0	— per tally	2 0-2 6
— tally	5 0-10 0	Scotch Kale, bush.	1 0—
— Italian, basket	3 6—	Seakale, doz punnets	15 0-18 0
Celeriac, per dozen	2 6—	Shallots, new, p. lb.	0 2—
Celery, doz. bndls.	8 0-14 0	Spinach, per bushel	3 0-4 0
— unwashed, doz.	8 0-10 0	— French, crates	4 6—
Chicory, per lb.	0 3—	Salsafy, bunch	0 4—
Cress, doz. punnets	1 6—	Tomatoes, Canary	
Cucumbers, doz.	10 0-18 0	deeps	2 0-3 0
Endive, new French,		Turnips, per dozen	1 6-2 0
per dozen	1 6—	— in bags	1 6-2 0
Garlic, new, lb.	0 2—	Turnip tops, bush.	1 0—
Horse-radish, Eng-		Watercress, p. doz.	
lish, bundle	1 6-2 0	bunches	0 6-0 8

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Asparagus "Fern,"		Maidenhair Fern,	
bunch	1 0-2 0	per doz. bunches	4 0-8 0
Carnations, per doz.		Marguerites, p. doz.	
blooms	2 0-3 0	bunches	2 0-4 0
Cattleyas, per dozen	9 0-12 0	Mignonette, per doz.	
Eucharis, per dozen	2 0-4 0	bunches	4 0-6 0
Gardenias, per doz.	1 6-2 6	Odontoglossums, per	
Lilium Harrisii, per		dozen	6 0-9 0
dozen blooms	4 0-6 0	Roses, Tea, white,	
Lilium lancifolium		per dozen	1 0-3 0
album, per dozen		— Safrano, per	
blooms	1 6-3 0	dozen	1 0-2 0
Lilium rubrum, doz.	8 0-5 0	— Catherine Mer-	
Lilium longiflorum,		met, per dozen	3 0-6 0
per dozen	4 0-6 0	Smilax, per bunch	3 0-5 0
Lily of Valley, per		Tuberose, per doz.	
doz. bunches	6 0-12 0	blooms	0 4-0 6

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, English,		Grapes, Colmar, B.	
per bushel—		per lb.	0 10-1 6
cookers, large	3 6-5 6	— Almeira, doz. lb.	5 0-7 0
various	2 0-4 6	Lemons, case	6 6-8 6
Blenheims, bush.	4 0-6 0	Lychees, new, pkt.	1 0—
— Nova Scotia,		Oranges, Navel	16 0—
per barrel	14 0-18 0	— Blood	8 6—
— Californian, box	7 0-9 0	— Murcia, case	6 6—
Bananas, bunch	5 0-9 0	— Tangierine, box	0 6-1 0
— loose, per doz.	1 0-1 6	— Jaffa, case	10 0—
Cobnuts, lb.	0 4—	— Valencia	12 6 16 0
Cranberries, case	12 6—	Pears, Californian	
— quart	0 6—	Winter Nellis, case	4 0—
— Russian kegs	2 0—	— stewing, crates	7 6—
Chestnuts, per bag	8 0-10 0	— Californian East-	
— Italian, " "	17 6—	ter Beurré, half	
Custard-Apples, per		case	11 0—
dozen	4 0-6 0	Pines, each	1 0-3 0
Grapes, Alicante,		Sapucaia nuts, lb.	1 3—
per lb.	0 10-1 6	Strawberries, per lb.	4 0-8 0
— Colmar, A.	1 9-2 6	Walnuts, cwt.	38 0—

REMARKS.—Since last report, the following prices have been given for Cape fruits: Peaches, 12s. per case; Plums, 6s. to 8s.; and Apricots, 7s. 6d. Tomatoes from the Canary Islands are very good. Brussels Sprouts and Parsley are very slow trade. Muscat Grapes are nearly over.

POTATOES.

Various sorts, 80s. to 100s. per ton; foreign bags, 50 kilo., 4s. to 5s.; Dunbars Maincrop, 130s.; Up-to-Date, 100s. to 120s. John Bath, 32 & 34, Wellington Street, Covent Garden.

FRUIT AND VEGETABLES.

GLASGOW: January 23.—The following are the averages of the prices recorded since our last report:—Apples, Canadian: Kings, 20s. to 24s. per barrel; Baldwins, Spies, Greenings, Russets, &c., 14s. to 22s. do.; Americans, various varieties, 13s. to 18s. 6d. do.; Maine and Boston Apples, various, 13s. to 17s. do.; Californian Newtown Pippins, 4s. 8s. to 8s. 6d. per case; 5s. 7s. to 7s. 6d. per case; Pears, Californians, various, 12s. to 15s. per case; Oranges, Valentias, ordinary, 420's, stamped papers, 8s. to 9s. per box; do., plain papers, 7s. 3d. to 7s. 9d.; large 420's, stamped papers, 8s. 6d. to 10s.; do., plain papers, 8s. 3d. to 10s.; extra large 420's, stamped papers, 10s. 6d. to 12s.; do., plain papers, 10s. to 11s.; large and extra large 714's, 12s. to 14s.; Lemons, Messina, 9s. to 12s. per case; Bananas, extra, 10s. 6d. to 12s. per bunch; No. 1, 6s. to 9s. 6d. do.; No. 2, 6s. to 7s. do.; Grapes, English, new, 1s. to 2s. per lb.; Mushrooms, 1s. to 1s. 3d. per lb.; Tomatoes, Canary deeps, finest medium, 3s. 6d. to 4s. 6d. per box; others, 2s. 6d. to 3s. do.; Onions, Valentias, 4s. 6s. 3d. to 6s. 6d. per case; 5s. 7s. to 7s. 6d. do.

LIVERPOOL: January 23.—Wholesale Vegetable Market. Potatoes, per cwt.: Lynn Greys, 3s. 6d. to 4s.; Bruce, 8s. 9d. to 4s. 3d.; Up-to-Date, 3s. 6d. to 4s.; Main Crop, 4s. to 4s. 6d.; Turnips, 6d. to 8d. per dozen bunches; Swedes, 1s. 2d. to 1s. 4d. per cwt.; Carrots, 2s. 3d. to 3s. 3d. do.; Onions, English, 5s. to 5s. 6d. do.; do, foreign, 3s. to 3s. 6d. do.; Parsley, 4d. to 6d. per dozen bunches; Cauliflowers, 1s. 6d. to 3s. 6d. per dozen; Cabbages 4d. to 8d. do.; Celery, 6d. to 1s. 3d. do. St. John's: Potatoes, 1s. 2d. per peck; do., new, 6d. per pound; Grapes, English, 1s. 6d. to 2s. 6d. per lb.; do., foreign, 8d. do.; Pineapples, English, 5s. each; Apples, 2d. to 4d. per lb.; Pears, 6d. do.; Tomatoes, 4d. to 6d. do.; Asparagus, 1s. per bundle; Cucumbers, 1s. 8d. each; Mushrooms, 1s. 4d. per lb. Birkenhead: Potatoes, 1s. to 1s. 2d. per peck; Grapes, English, 2s. to 4s. per lb.; do., foreign, 8d. to 10d. do.; Mushrooms, 1s. to 1s. 6d. do.; Filberts, 10d. per lb.

SEEDS.

LONDON: January 23.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., report an all-round improving inquiry for farm seeds. It is now established that the English crop of Red Clover seed is an exceedingly small one; meantime, all foreign markets for this article are very strong, whilst Alsike, white, and Trefoil, keep exceedingly steady. The tendency for perennial and Italian Rye-grasses is also upwards; meantime, more attention is being given to spring Tares, whilst English winter Vetches are wanted. Full prices are quoted for Mustard and Rape seeds. Canary seed is quietly hardening in value; but there is no change in either Millet or Hempseed. Blue Peas, Haricot Beans, and Spanish Lentils command former terms.

CORN.

AVERAGE PRICES OF British Corn (per imperial qr.), for the week ending January 19, and for the corresponding period of 1900, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1900.	1901.	Difference.
	s. d.	s. d.	s. d.
Wheat	26 11	26 11	+ 0 11
Barley	25 8	25 8	+ 0 1
Oats	16 2	17 9	+ 1 1

TRADE NOTICE.

Mr. THOMAS MAWSON, of Hazelwood, Windermere, landscape gardener, &c., has taken offices at 23, Conduit Street, Regent Street. Work for clients in Ireland, North Wales, and the northern counties of England and Scotland, will, as heretofore, be conducted from the Windermere office.

GARDENING APPOINTMENTS.

Mr. C. MARTIN, late of Clarence House Gardens, East Cowes, ss Horticultural Instructor to the County Council of the Isle of Wight, and commenced his duties on January 1.
Mr. REUBEN DARK, for the past seven years Head Gardener at Moreton, Bideford, Devonshire, as Head Gardener to Sir EDWARD STRACEY, Bart., Rackheath Park, Norwich.
Mr. J. COOK, Foreman at Presdales Gardens, Ware, Hertfordshire, as Head Gardener to W. G. PHILLIPS, Esq., Berwick House, Shrewsbury. He entered on his duties on Saturday, January 26.
Mr. J. B. WATSON, for the past five years and a half as Gardener at Upper Heath, Hampstead, N.W., as Head Gardener to H. T. DODGSON, Esq., Fognal Rise, Hampstead.

CATALOGUES RECEIVED.

SEEDS, BULBS, ETC.

JAMES COCKER & SONS, 130, Union Street, Aberdeen.
FRANK DUCKS & CO., 66, Deansgate, Manchester.
HOGG & ROBERTSON, 22, Mary Street, Dublin.
MILLAR BROTHERS, 20, Market Place, Hull.
R. H. BATH, Ltd., The Floral Farms, Wisbech.
BARR & SONS, King Street, Covent Garden, London.
W. SHAND, New Street, Lancaster.
HENRY A. DREER, 714, Chestnut Street, Philadelphia, Pa., U.S.A.
ARTHUR ROBINSON, 1A, Bishopsgate Without, London, E.C.
WM. SAMSON & CO., and W. & T. SAMSON, 8 and 10, Portland Street, Kilmarnock.



METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period January 13 to January 19, 1901. Height above sea-level 24 feet.

1901.	DIRECTION OF WIND.	TEMPERATURE OF THE AIR.				TEMPERATURE OF THE SOIL AT 9 A.M.			
		AT 9 A.M.		DAY.		RAINFALL.		At 1-foot deep.	
JANUARY 13 TO JANUARY 19.		Dry Bulb.	Wet Bulb.	Highest.	Lowest.			At 2-feet deep.	At 4-feet deep.
		deg.	deg.	deg.	deg.			deg.	deg.
SUN. 13	S.E.	42.1	40.5	43.6	37.2	...	...	11.1	42.6
MON. 14	E.S.E.	35.2	33.7	46.4	29.9	...	...	10.5	43.6
TUES. 15	E.S.E.	33.6	32.1	39.9	31.8	...	...	38.5	42.6
WED. 16	E.S.E.	37.8	36.0	48.6	32.4	0.0	0.2	37.4	42.0
THU. 17	S.S.E.	46.7	45.2	48.4	43.7	...	...	39.8	43.0
FRI. 18	S.S.E.	37.7	37.4	49.1	35.9	...	...	40.3	42.6
SAT. 19	S.S.E.	43.7	42.1	49.0	37.0	0.14	0.40	42.5	45.5
MEANS...	...	39.5	38.1	46.4	34.7	0.16	0.30	42.6	45.7

Remarks.—There was a sharp burst of frost in the early part of the week, followed by milder weather, and a cold, dry zephyr on the 19th.

GENERAL OBSERVATIONS.

The following summary record of the weather throughout the British Islands, for the week ending January 19, is furnished from the Meteorological Office:—

"The weather was generally fair and dry during the earlier half of the week, except in the W. of Ireland, but later on the unsettled rainy conditions spread to all parts of our Islands. Thunder and lightning were experienced in the N.W. of Ireland on the 17th.

"The temperature was above the mean in all districts, the excess ranging from 1° in the Midland Counties and England, S.W., to 4° in Ireland, and to 6° in Scotland, N. The highest of the maxima were registered on rather irregular dates, and ranged from 58° in Scotland, N., and 55° in Ireland, S., to 49° in England, N.E. The lowest of the minima were recorded

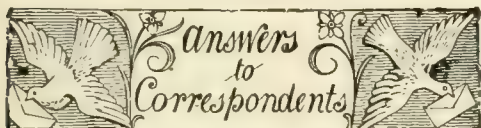
during the middle of the week, and ranged from 19 in the Midland Counties, 22 in Scotland, W., and 26 in England, E., to 34 in Ireland, N., and the Channel Islands, and 35 in Ireland, S.

"The rainfall was rather more than the average in England, S.W., and considerably more in Ireland, S. In all other districts, however, it was either just equal to, or less than the normal. In Scotland, N., the deficit was large.

"The bright sunshine exceeded the mean amount over Ireland, the S. of England, and the Channel Islands, and also in Scotland, N. In most other districts there was a deficiency. The percentage of the possible duration ranged from 26 in Ireland, N., and the Channel Islands, 25 in Ireland, S., and 23 in England, S., to 14 in England, N.W., and 11 in the Midland Counties, England, N.E., and Scotland, W.

THE WEATHER IN WEST HERTS.

CONSIDERING that the middle week in January is usually the coldest in the year, the weather has continued during the last seven days extremely mild. In fact, on several nights the temperature has been several degrees warmer than would be seasonable in the middle of the day. On the warmest night the lowest reading on the lawn was 44°—making this, with one exception, the warmest January night of the past sixteen years. The ground temperatures are also unusually high, being about 2° warmer at 2 feet deep, and as much as 6° warmer at 1 foot deep, than their respective January averages. About half an inch of rain fell during the week, and in the same period about 1½ gallon of rainwater has come through the turfed soil percolation gauge, against 2 gallons through the bare soil gauge. This was another gloomy week, the total record of sunshine amounting altogether to less than four hours, and the atmosphere has again been on the whole unusually humid. The earliest flowers of the year are making their appearance in rapid succession. The Winter Aconite first showed an open flower on the 17th, or five days earlier than the average date of the previous twelve years. Also on the 17th *Galanthus Elwesii ochrolepis* flowered. *Crocus Imperati* opened on the 21st, which is respectively a month and a fortnight earlier than in the two previous years. On the same day flowers appeared on *Iris Bakeriana* and *I. Histrio*. *E. M., Berkhamsted, Jan. 22.*



APPOINTMENT OF CITY GARDENER FOR EDINBURGH: *A. Correction.* I beg to correct an error in last week's *Gardeners' Chronicle* concerning Mr. J. W. McHattie, who was not head gardener at Oxenford Castle, but foreman for some time before being appointed gardener to the Marquis of Lothian at New Battle Abbey, Dalkeith. *W. Smith, Oxenford Gardens, Dalkeith.*

APPLES SPOTTING: *O. L.* See *Gardeners' Chronicle*, July 11, 1885, p. 51.

ASTERS TO FLOWER IN AUGUST AND SEPTEMBER: *W. Watson.* Sow in the middle of April in slight warmth, say 65° to 70°, and as soon as the plants have made a pair each of true leaves, remove them to an intermediate-house temperature, and at length to a cold pit or frame. Keep them close to the glass, do not crowd them in the seed-pans, prick off when an inch in height, and afford air freely in warm weather. Sow again a month later, and this time on a bed of rich sandy loam under hand-glasses, or in a garden-frame. If the seed be sown thinly broadcast or in lines, no pricking off will be necessary; and if care be taken in lifting them for planting to secure a large ball of earth, and not to injure or cut off the tap-root, such plants grow to a very fine size. Nothing spoils Asters so much as crowding them together at any stage of growth. An Aster, according to variety, may require to be separated from others and other plants by 8, 10, 12, and 18 inches.

BOOKS (names and addresses of amateurs of Orchids): *Jules Van Mol.* We have no such guide exclusively devoted to cultivators of Orchids. Most of their names and addresses are given in the *Horticultural Directory and Garden Year Book*, but their speciality is not indicated.—**HYBRIDISING AND CROSSING ORCHIDS:** *Mendeli.* We know of no special work on this subject, but much information may be gleaned from the *Gardeners' Chronicle*, Nov. 17, 1900, and from Darwin's *Fertilisation of Orchids* (J. Murray, Albemarle Street, Piccadilly, London), and *Veitch's Manual of Orchidaceous Plants*, and other works dealing with these plants.—*B. B. A Treatise on Manures*, Whitaker & Co., 2, White Hart Street, Paternoster Square, E.C. The price can be obtained

on application.—*Alva.* The book enquired about may be obtained in this country of Messrs. Williams & Norgate, 14, Henrietta Street, Covent Garden, London, W.C.

BURROWING INSECT: *Pears.* The tunnels in the wood are made by the larva of the Leopard-moth, often described and figured in these columns.

CAUSTIC SODA: *L. A. W.* Chemists in Cheltenham, unless wholesale, are not likely to keep such a substance in stock. Try a wholesale house at Gloucester or Bristol, or write to the One-and-All Agri Horticultural Association, Agar Street, Strand, W.C.; or to any of the horticultural sundriesmen who advertise in these columns, and whose names and addresses are given in the *Garden Annual and Horticultural Directory*. Fortunately for editors, not many gardeners are so helpless as L. A. W.

CORRECTION: *How to Make the Most of the Land.* We stated in error in noticing this book that it is published by W. H. Smith & Son. It should have been the Express Publishing Co., 30, Fleet Street, London.

DUBBING FOR BOOTS: *T. G.* "Gishurstine," a kind kept in stock by nurserymen and horticultural sundriesmen, is excellent for the purpose.

FRESHLY CUT TURF FOR MAKING A VINE-BORDER: *H. M.* Quite suitable if used as dug, provided it is chopped up roughly, and the other ingredients are mixed with it. In planting the Vines, some finer, more mellow soil should be placed around the roots. The fresh turf will decay slowly, and afford plant nutriment for many years. The turf, if possible, should be of a calcareous, loamy nature; a heavy rather than a light loam, but avoiding that which has much clay in it; and there should be enough sand in it, or added to it, to prevent it getting impervious to the air. As regards quantities, lime-rubbish should form one-sixth, and charcoal one-sixth, and to every 6 cubic yards 1 cwt. of coarse bone-meal, and 2 cwt. of ½-inch bones should be put. Lime-rubbish may be used instead of charcoal if the latter cannot be obtained. Place these materials together in a heap, and turn them twice before using. Do not make the border with wet materials, and do not finish the making in less than four years. 6 to 8 feet is a sufficient width at the first, and 4 to 5 feet can be added yearly till the entire border is completed. We think that a border 2½ feet in depth, with a layer of drainage materials 6 inches thick, sufficient for the Vine in this country.

FRUIT LAND: *H. B.* North of London, at from 10 to 25 miles out, not yet favoured by the builder. Good varieties are Bismarck, Cox's Orange and Ribston Pippins, Wellington, &c. We would advise you to get *Fruit Farming for Profit*, by Mr. G. Bunyard, Royal Nurseries, Maidstone, which will afford you trustworthy information on this and cognate subjects.

FUNGUS: *Caldecott.* *Agaricus nebularis.*

FUNGUS ON LAWN: *J. M.* Dig up the soil and replace it with fresh soil free from fungus; make it very firm, and return the patch, or sow grass seeds. Strong liquid-manure or gas-lime might destroy it, but the former is the better and surer method. Leave the fresh soil untouched till April, so that it may have time to consolidate.

LAWN IN BAD CONDITION: *A. T.* We do not approve of your method of renovation; better fork or scratch deeply the bare places, cover them thinly with loam and a small quantity of decayed stable-dung, make level and firm, then sow the finest lawn mixture, using *Poa trivialis* in the same in shady places; hack in the seeds, and roll or beat smoothly. Dress the rest with lime, loam and manure, letting these be undisturbed till March, then rake off.

MACCARONI: *T. G.* Does not grow, but is manufactured in Italy from a peculiar variety of Wheat, which is capable of making a tough sort of dough, that can be drawn out to a great length without breaking.

MALE SERVANTS TAX: *Head Gardener.* The employer pays usually for his head and second gardener. In very extensive places employing several departmental foremen, he may have to pay the tax on others.

NAMES OF FRUITS: *A. S.* 1, Irish Reinette; 2, Scarlet Nonpareil.—*W. F. G.* The Pear did not reach us in a condition for determination with certainty, but if you will send samples of the young wood we will compare them with the varieties which most nearly resemble it, and endeavour to settle the point for you.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*F. G. (Thelford).* *Viburnum Opulus.*—*W. R. H.* *Brunfelsia (Francisea) latifolia*, a native of Brazil. The flowers are lavender colour when they expand, and become white afterwards.—*A. S.* 1, *Maxillaria picta*; 2, *Oncidium ornithorhynchum*; 3, *Zygopetalum Mackayi*; 4, *Oncidium excavatum*, more often called *O. aurosum* in gardens; 5, *Juniperus excelsa*; 6, *Viburnum Tinus (Laurestinus)*.—*T. B.* 1, *Cupressus sempervirens*; 2, *Staphylea pinnata*.—*B. B.* *Ruellia macrantha*, *Bomarea Carderi*.—*F. D.* *Tussilago fragrans*.—*J. H.* *Odontoglossum Inseleyi*.—*J. P. D.* 1, *Laelia anceps "Stella"*; 2, *Laelia anceps Sanderiana*; 3, *Dendrobium aureum (heterocarpum)*; 4, *Oncidium maculatum*; 5, *Cypripedium insigne*, ordinary form.—*R. B.* *Correa alba*. It comes nearly white under glass.—*Albica.* *Lachenalia pendula*.—*G. K.* 1, *Ilex latifolia*; 2, *Cephalotaxus Fortunei*; 3, *Cryptomeria japonica var. elegans*; 4, *Ruscus aculeatus*.—*G. G.* *Pinus excelsa*.—*B. G. S.* The Papaw, *Carica Papaya*. The juice of the tree renders tough meat tender. *F. F.* An *Acacia*; send a better specimen.—*W. O.* *Willis.* *Tillandsia Lindenii* (Apples next week).

PINE-APPLES: *S. S.* There is nothing better than *D. Thomson's A Practical Treatise on the Pine-apple*, published thirty years ago by W. Blackwood & Sons, Edinburgh and London. Full directions as to the management of the plants are given in his *Fruit Culture under Glass*, published also by Blackwood & Sons, in 1881.

ROSE SOCIETY'S CATALOGUE: *F. T.* 1, if you become a member of the Society the list issued in 1893 will be sent on application to Ed. Mawley, Esq., Rosebank, Berkhamsted, Herts; 2, on the occasion of the Apple and Pear Conferences at Chiswick. Lists of these fruits were given in the *Journal of the Society*. Write to the Secretary, 117, Victoria Street, S.W.

SHAMROCK: *C. F. W.* It would be impossible to decide which was the original Shamrock. The incident of its use by St. Patrick, in illustration of the Blessed Trinity, is purely traditional. At the present day, *Trifolium minus* is the plant most in use, in Ireland, as Shamrock. *Medicago lupulina* sometimes takes its place in London, and also in Dublin. In some parts of Oxon, *Oxalis acetosella* is called Shamrock. Several varieties of Clover have been used, which show there is much conflicting opinion on the subject. For an exhaustive article on the subject, see *Gardeners' Chronicle*, p. 222, April 7, 1900.

SNOWBERRY BUSHES ENCROACHING ON GRASS WALK: *W. G.* The plants can be readily kept within bounds by clipping them at this season with the hedging-shears. If you really wish to kill the plants, try heavy dressings of gas-lime.

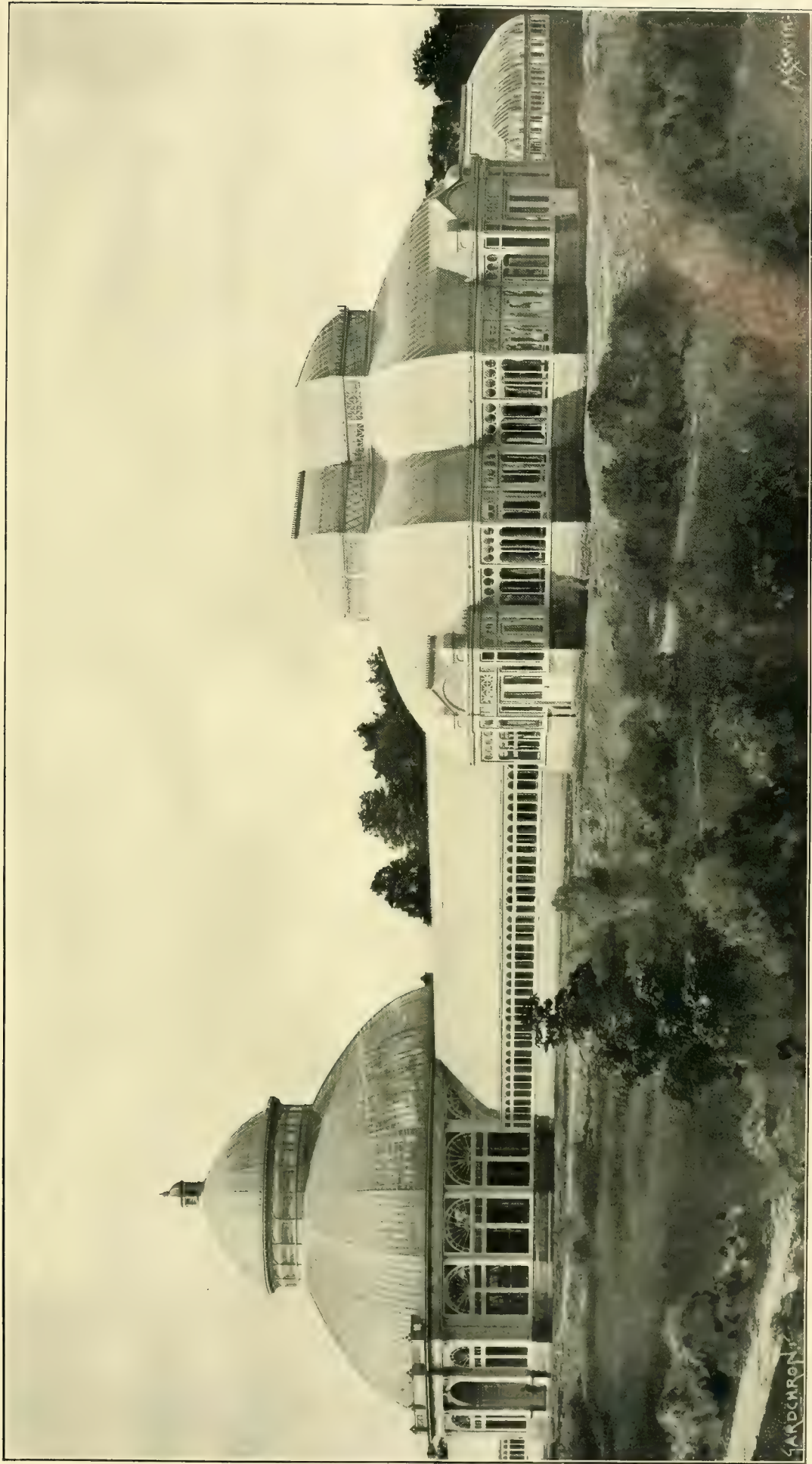
UNTIMELY GROWTH OF DENDROBIUM: *H. S. S.* It would be advisable to remove the pseudo-bulbs, and the sooner this is done the better; cutting away any dead or unsightly back growths will add to the appearance of your plants.

COMMUNICATIONS RECEIVED.—*A. Adams & Sons.*—*G. A.*—*C. B.*—*F. T. M.*—*J. O'B.*—*D. R. W.*—*G. G.*—*J. L.*—*T. G.*—*W. M. W.*—*Prof. Wright, Dublin.*—*F. E., Copenhagen.*—*J. C., Woodbridge.*—*F. T. M.*—*Leainei.*—*E. C.*—*Little and Balantyne.*—*A. B.*—*G. W.*—*W. Minty.*—*J. H., Duns.*—*Expert.*—*J. Baxter.*—*R. E. W.*—*A. K.*—*J. Machar.*—*G. Wythes.*—*W. P. B.*—*E. M.*—*S. W. F.*—*A. D.*—*J. O'B.*—*E. M. C.*—*Dendrobe.*—*T. Lewis.*

PHOTOGRAPHS, SPECIMENS, &c., RECEIVED WITH THANKS.—*J. W.*

DIED.—We regret to announce the death on Friday, January 18, at Newbold Revel, Rugby, of Ann Margaret (Maggie), the dearly loved wife of Thomas Glen, formerly gardener at Worth Park, Sussex.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, and ALL CLASSES OF GARDENERS and GARDEN-LOVERS at home, that it has a specially large FOREIGN and COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.



PART OF THE RANGE IN THE NEW BOTANIC GARDEN, NEW YORK.



THE

Gardeners' Chronicle

No. 736.—SATURDAY, FEB. 2, 1901.

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DAUGHTERS OF THE YEAR.

JANUARY.

THOSE midnight New Year bells bore to many of us, I daresay, as they bore to me, a mournful sound; their ghostly muffled peal came as an uncanny echo from the nether world in which dead years are stored away, and for which this dying year was in its order bound. I felt myself, as I lay and listened, to be watching the last moments of an expiring friend. I thought how it came to us twelve months ago, received with festive welcome; how it lived among us, saw our joys, shared our fun and revel, our depression and our gloom; and now it lay a-dying—

"Old Year, you must not die.
You came to us so readily,
You lived with us so steadily;
Old Year, you shall not die!"

But the inexorable hour passed, the midnight struck, the heir knocked at the door, the unmuffled bells rang out for him as for his father once. The King is dead—long live the King! Of course, it was all a figment of the fancy; no real change had passed. Between thirty-first and first, between the twelve and one o'clock, there was no difference in fact. Our New Year tallies not even with the winter solstice, which does mark an astronomical pause. There is

no reason why the year should begin with the first day of January; a century and a half ago it began with the twenty-fifth of March—it is all matter of sentiment merely, not of fact. But if our heads reject the illusion, our hearts admit it; however and whenever custom chooses to suppose the break, its effect on our natures is the same; the passage from year to year must, at the instant of its transit, seem to all minds momentous, and to some minds mournful.

Nor does the opening month of the new year reconcile us to the change. In most parts of England, in the colder parts especially, January bears an evil name. It breaks the spell of Christmas, scatters gathered friends, brings back the work-day life. Twelfth Day, which used to brighten it, which came to Charles Lamb's Feast of the Days "in a tiffany suit white and gold, all royal, glistening, epiphanous," is expunged from the popular calendar. Sixty years ago it was the "Children's Day;" round many a merry board they flocked, to eat of the great Twelfth Cake, with its ornaments of gold and silver tissue, its spices and its sweetmeats, and to cast lots for its pictured kings and queens; unconsciously commemorating—fittest actors they in such a drama—that gospel visit of the royal magi to the cradled Child upon the Bethlehem hillside. It is gone! We might have kept it, if only for the brightness which it shed upon this rayless month of January. A dull month, it must be owned; dullest amongst the "Daughters of the Year." Impressed on it in a severe year are the most vicious manifestations of winter; in a mild year, its pale unjoyous mornings, bitter winds, frost-nipt suns, recurring snowstorms, long-continued fogs, depress even temperaments which rose superior to the discouragements of dark December—

"The soul of man dies in him, loathing life,
And black with more than melancholy gloom"

Yet compensation is the law of life, as Gray's beautiful ode reminds us—

"Behind the steps that misery treads approach-
ing comfort view."

The month is in its cradle after all, and must be borne with hopefully. The beginnings of infant life are dull and troublesome; the look expressionless, the utterance a cry, the limbs incapable. By and by comes into the eyes, recognition of mother, or of nurse; smiles light up the vacant face, the hands are stretched with conscious purpose, the soul within the little mechanism awakes. So, as the days pass on, our January infant breaks its bonds and stirs, hinting hopeful promise of less lethargic months to come. This year, as I passed out of my garden on the tenth mid-day, cloaked and muffled for a struggle with keen wind and damp, I halted joyously to see beneath my Ilexes, the small green frill of an unfolding Winter Aconite leaf; in six days more, some dozen frills were there, crowned each with tiny yellow globe—now in the last week a hundred are in full bloom covering the ground. Then from a sheltered corner I brought in upon the twelfth, a handful of the Winter Heliotrope, Tussilago fragrans, which lives on for weeks in water, and fills the room with scent. Blue Periwinkles, two or three shine out now from their tangled mass of foliage; oriental Hellebore stands up tall and spreading, covered by a bellglass in sharp frosts. Yellow Jasmine lingers still, and on the standard bush of Cydonia japonica, several crimson blooms are open. Green stumps of Bluebell, Daffodil,

Tulip foliage, have everywhere broken through the ground, and on the day I write, just at the month's end, a few pendent bells of Snowdrop are indubitably open—

"They twinkle to the wintry moon,
And cheer the ungenial day,
And tell us all will glisten soon,
As green and bright as they."

I take their assuring witness as a reproof, repent me of my peevish earlier malediction, and invite the many who perchance have echoed it to emerge with me into a more wholesome mood, even as our bulbs rise patient and unconquerable out of the dead and frozen ground.

And then the rigours of the inverted year yield yet another fortifying recompense in the opportunity and impetus which they add to indoor work. Two English poets have sung of winter, Thomson and Cowper. Driven by its inclemency from their outdoor life, from their daily strolls beside the Thames at Richmond or the Ouse at Olney, both seek contentedly the undisturbed enjoyment of their fireside, to turn "the poet's" or "historian's page," to "hold high converse with the mighty dead." In summer, desk-work finds a formidable competitor in garden claims. There are always small reforms to scheme or to superintend; it is easier to leave one's books than to forsake one's plants when Nature quickens in the baking sunshine. In winter, literary absorptions reign without a rival; black soil and freezing air are powerless against the snug, sheltered indoor fascination of warm fire and inviting books. Breakfast over, letters answered, thermometers and rain-gauge registered, I settle down to my handsome writing-table: swiftly moves the pen, books collect around as each fresh topic calls for reference and illustration; sheet after sheet is written over and thrown aside, till noon brings the brief sunshine of the unprolific day, with such few Nature-aids to the recreative walk as feeding rooks and wailing plovers and soaring gulls can give. The hours of afternoon, the brain then less creative, but not less critical than in earlier freshness, are spent upon the labours of the file, revision of the morning's work, till darkness brings the lamp and lounge-chair, and the day ends with reading. An easy, nay, a lazy life, will say some of your hard-working readers; but I write, they must remember, as a veteran, who has earned by a long life of toil the right to leisure in life's evening. He divides it between his library and his garden; and out of his Corycian antiquity he recommends the twin resource to all his fellow horticulturists as a prospect amid the storm and stress of middle age, as a fruition when they come to reach what Shakespeare calls the reverence of outstretched life. *Corycius sener, Lincolnshire.*

NEW OR NOTEWORTHY PLANTS.

CHAMAEDOREA ARENBERGIANA.

THIS is one of the hardest Chamaedoreas, growing rapidly in every stove-house. When young, it resembles a C. Ernesti Augusti, with its large simple leaf; afterwards it puts forth pinnate leaves about 4 to 5 feet long, and with broad pinnules, 3 to 3½ inches broad, and 16 to 18 inches long. Such a plant is, before it makes a tall stem, a very decorative Palm, which becomes still more decorative when the crown of leaves is at the top of a stem of about 5 to 6 feet high. The colour of

the plant is clear bright green. Each pinnule has, like those of many *Chamedoreas*, a somewhat sigmoid form, and runs out into a long, fine apex. The plant is quite hardy in every parlour. A small stock of young specimens arrived last autumn at Mr. Sander's, at St. Albans. *Dr. Dammer.*

EPIDENDRUM CLAESIANUM, sp. nov.*

A very floriferous plant (fig. 27), growing in sturdy clumps. Stems very numerous, erect, slightly branching at the lower part, about 2 feet high covered with coriaceous dark green leaves from $1\frac{1}{2}$ to $1\frac{3}{4}$ inch long. Racemes numerous, pendent, terminal, many-flowered, slightly longer than the leaves. Flowers rather fleshy, pure white, about $\frac{3}{4}$ of an inch wide.

This charming species bears small but very numerous flowers; it comes from Columbia, where it grows to an altitude of 6825 feet. It was discovered by M. Fl. Claes, who introduced it in 1899 into his nursery at Etterbeck, Brussels. It flowered first on November 19 last. M. Claes showed it at the meeting of the Royal Horticultural Society on January 15, and it obtained a Botanical Certificate. *A. Cogniaux.*

[We are informed by Mr. O'Brien that on May 25, 1893, C. J. Lucas, Esq., exhibited a scarlet *Epidendrum* as *E. Claesianum* at the Royal Horticultural Society, but afterwards it was pronounced to be *E. Schomburgkii*, Lindl.; it will, therefore, not interfere with the standing of the species here published. ED.]

FRUIT REGISTER.

A HARDY VARIETY OF PEAR.

A RECENT issue of the *Journal de la Société Nationale d'Horticulture de France* contains an interesting account of the Dyl-a-fronz Pear of Ferghana. We read that:—"Professor Garnitch-Garnitski, Director of the Agronomic Station of Turkestan, sent to the Imperial Horticultural Society of St. Petersburg some Pears of a variety which grew and produced fruit under unusual conditions. This Pear, called 'Dyl-a-fronz' is cultivated on the high plateau of Isfara, near Kokand, at an altitude of 3,500 feet, where snow falls regularly from the month of October, and sometimes from the end of September, the winter lasting from four and a half to five months, the cold attaining to 25° C., and yet this Pear-tree does not suffer. The natives propagate the Dyl-a-fronz simply from seed, and obtain fruits the size of a hen's egg. In grafting the variety on itself, much larger, juicier, and more delicately-flavoured fruits are obtained. Further, this Pear only succeeds on high plains and among the mountains, where the summer is not too hot; in the low grounds, where the summer is, on the contrary, very hot, the tree does not bear any or at best only small and inferior fruits; however, the Agronomical authorities intend to submit this variety to a series of experiments. This 'Dyl-a-fronz' Pear may be classed among the Bergamots; it is juicy, sugary, and has a peculiar perfume. It is not usually gathered until after the slight frost, which renders it more juicy."

* *Epidendrum Claesianum*, Cogniaux, sp. nov. (Sect. *Epidendrum* § *Recurvum*, Benth.). Caulibus numerosis, erectis, elongatis, teretibus, foliosis, inferne leviter ramosis; foliis numerosis, distichis, longiuscule vaginantibus, basi cum vaginis articulatis, coriaceis, oblongo-ligulatis, acutiusculis, margine subscariois et subtiliter denticulatis; racemis terminalibus, pendulis, simplicibus, usque ad basin multifloris, foliis paulo longioribus; bracteis membranaceis, anguste triangularibus, ovario 2-3-fo brevioribus; floribus parvis, albis, segmentis patulis, carnosulis; sepalis late oblongis, dorsali obtuso, lateralibus acutis subfalcatis; petalis oblongo-spatulatis, obtusis, sepalis dorsali paulo minoribus; labello erecto-patulo, sepalis aequilongo profunde trilobato lobis lateralibus majusculis, concavis, oblique ovatis, obtusis, lobo terminali obovato-quadrangulo, apice profundiuseule emarginato, disco crasso uncostato basi bituberculato; columna brevi, usque ad apicem cum labello connata. Species *E. cernuum*, Kunth satis proxima. Habitat in Columbia, altit. circ. 2100 m.; a cl. Fl. Claes, ann. 1899 introducta.

CHADDLEWOOD, DEVON.

Few gardens of the south-west are more replete with interest to the flower-lover than that of Chaddlewood, the residence of Mr. G. S. Soltan-Symons, distant about 5 miles from the town of Plymouth. At one side of the house, and standing at a little distance, are some fine Limes, the short sward beneath which is white during the month of May with countless flowers of the double Meadow Saxifrage (*S. granulata*, fl.-pl.), that furnish an uncommon and charming picture. The first plants

pyramids of lavender or white bloom in the early summer. *Andromeda* and Ghent Azaleas do well, and *Benthamia fragifera* is smothered in June with its large pale yellow blossoms, which are followed later by the crimson fruits that have earned it the right to share with the *Arbutus* the title of Strawberry-tree. *Carpenteria californica* bears its scented white flowers hard by a fine example of *Chamerops excelsa*, some 15 feet in height. *Cistuses* are well represented, and *Citrus trifoliata* grows in the open; while *Choisya ternata* forms large bushes white with flower in the summer, and often pro-



FIG. 27.—*EPIDENDRUM CLAESIANUM* (COGNIAUX): FLOWERS WHITE.

were brought into the garden more than fifty years ago, since when they have multiplied until they can now be reckoned by thousands.

The estate is well wooded, and contains many fine trees, one symmetrical specimen of *Araucaria imbricata*, standing in an isolated position, being over 50 feet in height, with a trunk girth of 10 feet 6 inches. This tree was planted forty-eight years ago, and shows no signs of impaired vigour, its lower branches sweeping almost to the ground-level. *Rhododendrons* are grown in quantity, and some of the largest bushes have attained a height of about 20 feet. The garden contains a good collection of flowering trees, shrubs, and climbers. *Abutilon vitifolium* grows freely, and, not requiring wall protection in the south-west, forms handsome

ducing a second crop hard on Christmastide. *Clerodendron trichotomum* makes good growth, and on a high wall *Clematis laugiosa* (figured in a recent issue. Ep.), and *Climanthus puniceus* display their lavender and crimson blossoms. In the early spring, a large bush of *Cytisus præcox* (ante, fig. 19, p. 41), some 8 ft. in height and as much in diameter, is a sheet of pale sulphur; while later on *C. scoparius* var. *Andreanus* and *C. alba* bloom. *Daphne Cneorum* bears its soft red flower-clusters, and *Desfontainea spinosa* its tubular-shaped blooms of vermilion and gold. *Erica codonodes*, springing up freely from self-sown seed, assumes giant proportions, often reaching a height of 12 feet or more; and the Heath-like *Fabiana imbricata* shows almost equal vigour. The Snowdrop-tree, *Halesia*,

tetraptera, bears its white bells; and *Hydrangea paniculata* its massive flower-trusses, while *H. hortensis* is represented by a line of stately plants near the lodge that are from 5 to 6 feet in height, and afford a glorious autumnal display. The

the cut-leaved Japanese Maples (fig. 28) adorn prominent sites in the rock-garden, one planted about thirty years since having a height of 4 feet and a branch spread of 6 feet. *Metrosideros robustus* bears a profusion of its scarlet bottle-

like blooms, and *Romneya Coulteri* its large, scented, white flowers with their crêpe-like petals; while the Rose *Acacia*, *Robinia hispida*, is also grown. *Spiræa*s include many of the best species, *Stuartia grandiflora*, *Viburnum plicatum* (fig. 29, p. 72), and *Xanthoceras sorbifolia*, add to the list of flowering shrubs; and *Vitis Coignetiae* on a tree-trunk affords a brilliant example of autumnal colouring.

The herbaceous borders (fig. 30, p. 73) are well filled with ornamental flowering plants, including certain species of *Crinums* and *Gladioli*; *Hemerocallis* in variety, among which *H. aurantiaca* major holds a forward place; Lilies and Irises of the different sections, *Pæonies*, both herbaceous and tree, *Pansies*, *Alstroemerias*, *Thermopsis montana*, *Gerbera Jamesoni*, *Lucarvillea Delavayi* and *Ostrowskia magnifica*, while groups of fine Bamboos and *Yuccas* occupy conspicuous sites, and Christmas Roses are particularly well grown.

Ferns succeed admirably, *Adiantum pedatum* and *Lomaria magellanica* being especially vigorous.

A Rose-trellis 120 yards in length forms one of the features of the garden, and in summer is a dream of beauty. Among the many varieties employed in furnishing it are *Carmine Pillar*, *Stella Allister Gray*, *Aglaia*, *Euphrosyne*, *Thalia*, *Claire Jacquier*, and *Mme. Abel Carrière*. The beds on either side of the trellis are devoted to the culture of flowers for indoor decoration, and supply sheaves of blossom for this purpose during the greater part of the year.

Great as are the attractions already touched upon, it is in the rock garden (fig. 33, p. 81) that the interest culminates. This garden, which is situated in a sheltered position at the foot of a steep slope, is the owner's especial hobby, every stone having been placed in position under his immediate supervision, and every occupant having been planted by his own hands. Some of the rock masses are of fine form, and afford sites to suit the varied requirements of the often fastidious tenants. To enumerate even a small portion of the plants grown on this rockery would be to write a catalogue which would fill more space than the editor could grant.

Plants other than perennials are introduced at times with good results into the rock-garden for the sake of effect, such as *Phacelia campanularia*, whose deep blue gives valuable colour; and *Lotus peltorhynchus*, which, when put out in the late spring, produces its scarlet flowers in abundance on its trailing growths. S. W. F.

HYBRIDISATION IN AMARYLLIDÆ.

(Continued from p. 53.)

My own efforts have been directed for many years to raise *Hippeastrum* hybrids, but I cannot claim to have met with success in any single instance. From this experience it would appear that raising inter-specific hybrids in this genus is a much more difficult matter than is generally supposed.

The labours of many hybridists during the past century have only produced, so far as I am aware, the three or four undoubted hybrids mentioned previously, viz. (1), *Solandriflorum* × *Johnsoni*; (2), *Johnsoni* × *solandriflorum*; (3), *Pardinum* × *reticulatum*, and possibly *reticulatum* × *vittatum*. These must be reduced to two or three if *Johnsoni* is regarded as a hybrid. Probably, almost certainly, others have been raised, and their parentage left in doubt. I think this has been more especially the case with such species as *equestre*, *aulicum*, and the *rutulum-reginæ* group. I have found all these species to be good seed-bearers on their own pollen, or when crossed with mongrel forms. The fact that such mongrels have already in them the blood of these species, accounts to my mind for the ease with which they cross back with their pure bred relations. Dr. Bonavia also informs me that when in Lucknow he raised many crosses of *equestre* (presumably with garden mongrels?), which produced interesting and beautiful varieties. My own experience coincides with this. The



FIG. 28.—JAPANESE MAPLES AT CHADDLEWOOD. (SEE P. 70.)

silvery-leaved *Halimodendron argenteum* (Salt-bush), of which there is a good specimen, is perhaps of more value for its foliage than for its purple flowers. *Lapagerias* succeed on a north wall, and in open winters bear their blossoms untarnished until Christmas; while on the same wall *Tropæolum speciosum*, a subject somewhat difficult to establish in the south, flowers well. Some fine examples of

brushes in the summer; and the little Sand Myrtle, *Leiophyllum buxifolium*, and the pink New Zealand Broom, *Notospartium Carmichaeliæ*, are also present. *Philadelphus Lemoinei* and *P. microphylla* form fragrant bushes when closely set with blossom, and the *Syringas*, the so-called Lilacs, are represented by the best of the newer varieties; *Philesia buxifolia* bears its *Lapageria*-

epiphytal section, from the Organ mountains, also set seed freely with me on their own pollen; and I have raised seedlings from solandriiflorum, stylosum, and vittatum. In fact in every case where fair and prolonged trials were carried out with healthy bulbs, fertile seeds were produced. I experimented with twenty-five species and varieties of *Hippeastrum*, not including hybrids.

Among allied genera such as *Habranthus*, *Zephyranthes*, and *Sprekelia*, I can find no specific hybrids. Some *Zephyranthes* seed very freely with me, especially *brachyandra* (*Habranthus brachyandrus* of some), *gracilifolia*, *rosea*, *elliptica* (sp. nova), and *Andersoni*. *Brachyandra* is a most extraordinary plant as regards seed production. I have taken the greatest precautions to prevent self-fertilisation, often cutting into the flower the day before expansion to remove the inert anthers; and have attempted to cross it with every form of *Hippeastrum* and *Zephyranthes*. On practically every occasion seed has formed, and with unvarying regularity the seedlings have proved true to type. This mystery is one I have been unable to solve.

To test the "prepotency" theory, I tried the pollen of *Sprekelia*, *Placea*, and *Lycoris*, with just the same result, or lack of result. *Candida major* never bears seed with me, though typical *candida* does so freely in most places; *carinata* also never carries seed, nor does *Sprekelia*. I experimented with thirteen species in these genera.

Among *Hymenocallids*, some three very interesting hybrids have been raised:—

H. macrostephana was raised in Herbert's time, by crossing *speciosa* and *calathina*. Recently Mr. Hoog (of the firm of C. G. Van Tubergen, junr., Haarlem), repeated the cross, taking fine forms of both species as parents. He has named his hybrid "Daphne," and it is certainly both superior to, and distinct from, the *macrostephana* previously in commerce. It differs from Mr. Baker's description, in having foot-stalks 7 inches long to the leaves, and the flowers are larger and "toothed" differently. It appears to be a mule.

Amancaes crossed with *calathina* by Herbert gave the sulphur-coloured hybrid of *Botanical Register*, 1665, equi-poised between either parent. This hybrid (*sulphurea*) is still living, and I received it a few years back from Sir Charles Strickland.

Colonel Trevor Clarke, by crossing *calathina* with *Elisena longipetala*, raised a hybrid which Mr. Baker could not differentiate from the Peruvian *Ismene deflexa*.

I cultivate twelve kinds of *Hymenocallis* and *Elisena*, and find them all to carry seeds at times, excepting the two hybrid mules, and a new sp. (*schizostephana*).

Among *Eucharis* and *Urceolina*, two hybrids are recorded. Far the most interesting is the generic hybrid (*Urceocharis*, Mast.) between *Eucharis* (species?) and *Urceolina aurea* raised by Messrs. Clibran. This, roughly, takes after *Eucharis* in colour, and *Urceolina* in form.

Stevensii is a hybrid between *candida* and *Sanderi*, of recent origin, I think.

Burfordiensis, raised in the garden of Sir Trevor Lawrence, but of unascertained parentage, has recently been claimed as a hybrid. Similar claims have been advanced to another form under the name of *Elmetiana*.

Mr. Krelage, in his short monograph of the genus *Eucharis*, listed both *Mastersii* and *Bakeriana* as hybrids, the former between *grandiflora* and *Sanderi*; the latter between *grandiflora* and *candida*. I cultivate only five kinds of these genera, and the only one which bears seeds with me is *Lehmanni*, which does so regularly.

In the large cosmopolitan genus *Crinum* is a wide field for hybridisation. I know of three undoubted hybrids. Kunth, in his *Enumeration*, vol. v., p. 582, gives twenty-three alleged

hybrids, and Sweet, *B. F. G.*, p. 512, gives thirty-two.

Herbert claimed "*Govenianum*" as a hybrid, and had it figured, but the plant apparently died out shortly after.

Bury (fig. 30) gives an unnamed hybrid raised out of *pedunculatum* by *zeylanicum*. Curiously enough, the result, as appearing in the painting, shows a plant indistinguishable from *amabile*. However, this is no reason for hesitating to accept Bury's statements as to its hybrid origin.

C. Powell was apparently raised some time not long prior to 1887, in Sir W. Bowman's garden, by crossing C. *Moorei* and C. *longifolium*. The result is a beautiful and very useful plant equi-poised between the parents, but possessing originally a brilliant rosy-pink colour more intense than either. Since then Powell has

Only two of my seedling *Moorei* have yet flowered, and neither of them was true to type.

Of course, if *Moorei* comes "any way" from seed, we may entertain doubts as to whether the blood of *longifolium* enters into the composition of Powell, which might be merely a seedling of *Moorei*.

In any case, if *Moorei* does not come true from seed, it is not a "species," and hence Powell would not be a specific hybrid, nor the plant below (*scabrum* × *Moorei*). Among the twenty-five kinds of *Crinum* cultivated in my garden I find C. *Moorei* the most certain seed-bearer. C. *giganteum*, *odorum* (sp. nova), and *purpurascens* have never borne fertile seed.

Recently I raised a new hybrid *Crinum* out of *scabrum* by *Moorei* Schmidt. The female



FIG. 29.—*VIBURNUM PLICATUM*. (SEE P. 70)

become widely spread in British gardens, and a very beautiful pure-white form has appeared, besides others bearing many shades of pink. The hybrid has all the hardness of *longifolium*, and, I am informed, seeds freely, which is very rare in hybrids. I have, however, some doubt as to whether *Moorei* is a good species. Seedlings raised by me, from plants flowering in the open ground, in a garden where no other open-air forms were grown, showed a wide divergence from the type, both in colour and shape of flower. The same splendid rosy-pink that Powell has appeared in one seedling, combined with a flower widely divergent in shape from the parent. In fact, had I attempted to hybridise the parent, and had I succeeded in raising such a plant as this, I should have been quite satisfied that I had raised a true hybrid. This is, I believe, the way in which many alleged hybrids have been raised by really conscientious gardeners.

parent was the Jamaican variety, which is by far the finest form of *scabrum*. The seedlings flowered in three years and ten months, and the foliage partook of the characters of both parents. The flowers were most like *Moorei* in shape, but of a brilliant crimson-pink colour, more intense than in any *Crinum* I have seen before. Another seedling from the same fruit was not so intense in colour. Both have refused to carry seed so far. A. Worsley.

(To be continued.)

CRINUM WORSLEYI (C. *SCABRUM* × C. *MOOREI* ♂).

Although Dean Herbert records a good number of hybrid *Crinums* in his *Notes on Amaryllidaceae*, and in the second edition of Sweet's *British Flower Garden*, no fewer than thirty-two are mentioned, not one of these is known to be in cultivation now. The only authentic hybrids I know are two, viz., C. Powell (Moorei × *longifolium*) and C. Kirkcaldie (Kirkii × *capensis*), and I have never seen the

latter. To these must now be added a third, which has been raised by Mr. A. Worsley in his garden at Isleworth from the two species above named. The female parent, *C. scabrum*, was an exceptionally good form, which Mr. Worsley found in Jamaica in 1894; the pollen plant was the white variety known as *C. Moorei* var. *alba*. The cross was effected four years ago, and the first hybrid flowered in October this year. It is about intermediate between its parents, having the bulb and leaves of *C. scabrum*, and the inflorescence of *C. Moorei*; whilst the flowers, which are fragrant, are bright rose-crimson, paler below, as in the flowers of *Zephyranthes carinata*. Leaves 4 feet long, 3 inches wide, and sub-distichous; scape erect, 3 feet high, bearing an umbel of six flowers which open in succession as in *C. Moorei*; the

earlier setting of the fruit. Another mistake that is generally made, is in raising them in too great a heat, whereas the more slowly the seedlings grow the better. Some people with no more glass than a cold frame succeed well with Tomatoes by putting the seed-pans in the kitchen, and when they are in the second leaf, say the latter half of March, transfer them to the frame and cover them up at night, when by the end of May they are fine, sturdy plants.

The seed should be sown or planted an inch apart in pans or boxes, dibbled-in, in fact, a quarter of an inch deep; this little extra trouble is not usually taken, but it pays. The seed is usually sown as thick as Mustard and Cress, and then, when the seedlings are 2 to 3 inches high, yellow and lank, taken out of the pans and pulled asunder,

TREES AND SHRUBS.

LARIX SIBIRICA.

WE observe in your issue of the 5th ult. that Mr. Elwes alludes to this species as grown by us. Few are better acquainted with Larches than Mr. Elwes himself, and few perhaps have had more opportunities of judging of their merits in their native climes. Whilst *Larix sibirica* may be a very fine tree in the mountains of North Siberia, from which locality our seed has been imported, and whilst but for our late spring frosts it might (and in our opinion would) also be a good grower in these islands, we cannot say that we regard it with much favour, because of the early growth it



FIG. 30.—HERBACEOUS BORDER AT CHADDLEWOOD. SEE P. 70.)

segments are 4 inches long and $1\frac{1}{2}$ in. wide, and regular as in *C. scabrum*; when fully open they measured nearly 6 inches across; they remained good for three days. A second plant from the same cross bore an umbel of thirteen flowers of a paler colour, and had leaves 4 inches wide. The plants were grown in a warm greenhouse. W. W.

REARING TOMATO-PLANTS.

THE time of sowing must depend, at least as regards indoor fruit, upon requirements as to time of fruiting; but the first half of February is a good time for indoor plants for ordinary purposes, and not at all too soon for plants for open air fruiting. The latter are commonly raised too late, as they are generally only just showing their green flower-buds when put out at the end of May. They ought to be just ready to bloom then, and root-bound in 48-sized pots. Getting root-bound at this stage serves as a slight check to their luxuriance of habit, and tends to the

much fibre being destroyed in the process, as will be seen if the earth which leaves the roots is examined. On the other hand, when sown an inch apart, each plant can be removed with a little ball of earth, and it goes right on growing without any check whatever. This is of special advantage when rearing plants for outdoors, where time of fruiting makes such a difference to the amount of fruit ripened.

The seedlings should be put into 60's when they are in the first rough leaf, being not more than an inch high if they have been properly grown. The potting-soil should not contain any fresh manure, as it induces too sappy a growth. New turf, with the addition of a little leaf-mould and road-sand, is about the best stuff that can be used, and it should be well pressed down into the pot, though only with the thumbs. When the roots are coming out at the bottom of the pots, they should be put straight into 5 or 6-inch pots if they are intended for indoors; but if for outdoors, they should be put into 48's, the same sort of soil being used as at first. *Alger Pet's*.

makes, which exposes it to the danger of late frosts. Already, indeed, the buds of this variety are swelling and showing signs of starting to grow, and though this may be due in some measure to the abnormal mildness of the season, we find that it is always a long way in advance of *Larix europæa*, either from Tyrol or home-saved seed. For this reason we would advise all who would give it a trial to plant on a northern aspect. Of the more uncommon Larches we give preference to *Larix leptolepis* (Japan); this has proved itself perfectly hardy with us, is a splendid grower, and unless we are much mistaken, will eventually be extensively planted, if it does not actually become the Larch of the future in this country. Growing side by side with *Larix europæa*, the foliage retains its beautiful glaucous colour when the latter is completely browned by frosty winds in autumn; and though this may be regarded as an indication of greenness or immaturity, we have not yet seen it suffer from frost. *Little & Ballantyne, Carlisle*.

THE WEEK'S WORK.

FRUITS UNDER GLASS.

By MALCOLM MCINTYRE, Gardener to Sir CHAS. TENNANT, The Glen, Innerleithen, Peeblesshire.

Vines.—In the early vinery, attention must be paid daily to securing and regulating the laterals, enough of them being left to furnish every part of the trellis with an even covering of foliage. Bearing shoots should be pinched at the second or third joint beyond the bunch, and all laterals behind it at the first leaf. It is of importance that the principal foliage be fully exposed to light and air, which can only be done by avoiding the crowding together of the shoots. Let all superfluous bunches be removed as soon as the best placed and most promising ones can be observed. The temperature should be raised to 70° by day, and 60° by night, and air afforded whenever the temperature begins to rise, shutting the house early with sun-heat, and affording water to the paths, walls, &c.

Fertilisation.—When the bunches are in flower let the temperature be raised on every favourable occasion, applying enough fire-heat to favour a free circulation of fresh air, but avoiding, most carefully, draughts of cold air, and keeping the atmosphere somewhat drier, in order to foster the dispersion of pollen. Go over all shy-setting varieties in the forenoon with a camel's-hair brush or rabbit's-tail, using Black Hamburg pollen when obtainable.

Water.—The inside borders should be afforded water immediately before the Vines come into bloom, which will suffice till the berries are set and ready for thinning. Aged Vines should be supplied with liquid-manure at almost every time water is applied. Young Vines are better without liquid-manure (especially if they are strong), until after they are thinned, too much vigour being detrimental to fertilisation. In well-drained inside Vine-borders, the supply of water must be abundant. Temperature should be 65° by day, with an advance to 75° by sun-heat.

Vines started with the new year will now be breaking strongly, and the rods should be syringed two or three times a day until the bunches are formed. Maintain atmospheric moisture by damping all available surfaces excepting the hot-water pipes when they are very hot, the steam raised by doing this being very different from that given off from less warm surfaces. Keep the evaporating troughs well charged with liquid-manure and water. When fermenting materials are used, turn them from time to time, adding a little fresh horse-droppings and short stable-litter. The ammonia arising is good for the foliage, and checks the spread of red-spider. Carefully ventilate the vinery. Increase the temperature to 55° at night, and from 60° to 65° during the day, with an advance to 75° by means of sun-heat.

Vines raised from eyes.—No time should be lost in starting a lot of "eyes," that is short well-ripened cuttings furnished each with a bud, inserting them in pots, pans, or square pieces of turf; the pots, &c., being filled with good, rich, friable loam, a pinch of sand being put under the bud and merely covering them over, and plunging them in a bottom-heat of 80°.

Strawberries in pots.—Notwithstanding the sunless weather, the early plants are advancing better than we might have expected. Let the fertilisation of the flowers be continued at hours when the temperature is high on fine days; afford plenty of air so as to prevent the condensation of moisture. When the fruit is set and well thinned, the fruit makes rapid progress. Afford water with regularity, and afford tepid liquid-manure, and ply the syringe freely, in order to prevent red-spider attacking the leaves when the fruit commences to ripen; if a dryer atmosphere be secured, it will improve both colour and flavour. Get the main crop plants ready by cleansing and transferring them to light shallow pits where the flower-buds will come on in advance of the roots; and draw from these as they are wanted. In all stages of growth preceding flowering, the plants should be examined closely for aphides, and upon its first appearance fumigate them.

Figs.—When the pot-plants have made four or five leaves, the strongest shoots should be pinched at the points by degrees; and in order to prevent dropping, thin the fruit, not leaving too many, or numbers will drop off. Top-dress with a rich

compost, afford water copiously, and sometimes use liquid-manure at a temperature of 80°; syringe the plants twice a day. Freshen up the fermenting material, and turn it occasionally, and afford sufficient fire-heat so as to maintain a night temperature of 60° to 65°, and 70° to 75° by day, Figs revelling in heat, light, and moisture. Keep the glass clean, and close early, when every part of the foliage must be copiously syringed with warm water.

THE FLOWER GARDEN.

By T. H. SLADE, Gardener to Lord POLTIMORE, Poltimore Park, Exeter.

Doronicums.—These plants will be found useful in beds and borders, and the best of them is *plantaginifolium excelsum*. Plants put out in the autumn will help to make the borders bright in the early spring, while others divided at this season will flower late in the summer.

Day Lilies, Hemerocallis flava, and others, are handsome, but the flowers are evanescent. The best is *H. fulva*, a strong grower, and valuable for planting in shrubby borders in a moist place, or near lakes and streams.

Perennial Gaillardias are likewise effective plants for the border, and show to greater effect if planted in groups.

Aquilegias.—The improved strain of hybrid *Aquilegias* is indispensable, and the beauty of the plant is best observed when it is planted alone. Seed of *Aquilegia* sown last summer and kept growing will make a good show the forthcoming season.

Hydrangea paniculata grandiflora.—An excellent late flowering plant, with large globular heads of bloom. It makes a fine display when planted in masses on the turf, either as dwarf plants or as standards, with a carpet of Summer Snowflake, *Leucojum aestivum* or *L. vernum*.

Hydrangea paniculata.—In pruning this plant the weaker shoots should be entirely removed, and the strongest cut back to one or two eyes at the base. Mulch the bed with some half-rotten manure; and beds intended to be planted should be heavily manured and afterwards trenched.

Kniphofia aloides, or, as formerly called, *Tritoma Uvaria*, is a well-known plant, useful for its bright flower-heads late in the summer and early autumn. *Kniphofias* of all varieties are effective in the garden, and more especially when planted against a dark background, or in front of groups of Bamboos, affording a fair amount of space between each plant, and covering the ground around them with *Vinca major variegata*. The plant is not particular as to soil, but it thrives and gives finer spikes in a deep loam. The quickest way in which to increase the stock of plants is by division. In the colder parts of the country the hybrids require some kind of protection round the crowns in the winter, such as that afforded by a small heap of cocoa-nut fibre refuse or coal-ashes. *Kniphofias* may be planted from now till the middle of March. When planting, do not trim or shorten the leaves much.

THE HARDY FRUIT GARDEN.

By C. HERRIN.

Morello Cherries.—These fruits are commonly grown against walls, but the trees do well as standards, being very fruitful, and for the purpose of retarding the ripening of the fruits, or enjoying them for as long a season as is possible, they are usually placed on northern aspects. As the Morello Cherry fruits chiefly on the one-year-old wood, as many shoots of this age should be retained as will cover vacant spaces as possible, a distance of 3 inches between them being afforded. All foreright young shoots should be cut back to three buds, and they will in a season form fruit-bearing spurs. In pruning aged trees, the older unfruitful branches that can be spared should be removed, and young shoots laid-in in their places. Such trees may be kept in a fruitful state for many years if this method be practised. The leading shoots should not be shortened, but laid-in at full length.

Sweet Cherries require a somewhat different treatment to the above, as the fruit comes mostly on spurs in clusters, and the pruner should endeavour to increase the number of these. If summer pruning was practised, not much pruning will now be necessary. It will consist chiefly of shortening

foreright shoots, and cutting back over-long spurs not sufficiently shortened at the summer pruning to three or four buds, but leaving strong leading shoots at full length and shortening weak ones to a few buds. When young trained trees are being pruned, provision should be made for covering the wall by retaining one or more young, vigorous shoots upon the upper sides of the principal branches, taking care that they start from a point as near as may be to the centre of the tree. Over-vigorous trees should be treated in the same manner as the Apricot when growing grossly. The sweet Cherries being subject to gumming when bruised or injured, chalk or lime rubble should be freely mixed with the staple where the trees are in this condition.

Pruning Orchard-trees.—The Apple and Pear-trees, if mossy and lichen-covered, should have the branches thinned, and the remaining ones and the stem cleansed of parasitic growth. As the work in an orchard can generally be carried out in cold weather, or when the ground is covered with snow, it need not be delayed, but should be carried out whilst growth is dormant. At the time of writing, the prospect of much wintry weather occurring is not great, and this very necessary kind of work in an orchard should be undertaken forthwith. The heads of the trees, especially those of a dense habit of growth, will need a little severer thinning than others with a more open and spreading habit, all of the trees being gone through regularly row by row. A beginning should be made by cutting out some of the innermost unfruitful branches and useless sprays, next taking out one of every pair of intercrossing branches, and all the dead shoots. The complete pruning of a tree which has been neglected for years should not be carried out in one, but extended over two or three years, in order that no great check be given to the tree. Where large branches are removed with a saw, the surface of the cuts should be smoothed over with a plane, spoke-shave, pruning-knife, or chisel, according to the size of the branch, and be painted with a mixture of tar and clay, or ordinary lead-coloured oil-paint. Young standard trees will need to have the points of the leading shoots shortened a little, about five of the best placed being chosen for forming the foundation of the crown, weak and later growths being shortened so as to form fruit-spurs. The pruning of newly-planted standards should not take place before March. To remove moss, a bass brush is necessary, or the big limbs and stem may be scraped with hoop iron, and the brush used afterwards. The main branches may then be dressed with a coat of thick lime-wash prepared with quick-lime. The potash and soda solution recently recommended in these pages is an excellent winter dressing if used at a warmth of 100° to 120°, a sprayer attached to a garden-engine being employed.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HUSSEY PACKE, Esq., J.P., Prestwold Hall, Loughborough.

Codiaeums.—Cuttings of these plants (*Crotons*) may still be put in before growth in the plants commences. Select well-developed shoots, and insert one cutting each into a large 60, and plunge into a propagating frame or case.

Ficus elastica is readily increased from half-ripened growths, and from buds, providing the wood in this case is not too old. Cuttings of *Abutilon Sawitzii*, *Salvia splendens*, and *Streptosolen Jamesoni* may now be inserted in pots, plunging these in mild bottom-heat.

Cyclamens.—Seedlings that were pricked off into pans some time ago will now require to be potted. Make use of a compost consisting of loam, leaf-soil in equal parts, and sand, care being taken not to injure the roots in the operation, nor to bury the tubers too deeply. Place them as near the glass as possible in a house or pit having a temperature of 60°, and syringe them twice daily. Apply water at the roots sparingly till re-established.

Gloxinias.—The last batch of autumn-flowering *Gloxinias* being the seedlings of 1900, should now be shaken out of their store-pots and laid out in boxes filled with loam, leaf-soil, and sand, placed in a temperature of 60° at night, 65° by day, moistening the same slightly, and subsequently potting them in 2 to 3 inch (60's), when in active growth, they may then be placed on a shelf in a moist warm house.

Eucharis grandiflora.—Those plants which flowered at about the end of last year may be afforded weak manure and soot-water alternately, and by this means the plants will flower again in the month of July. Any plants which failed to produce flowers at the end of December, should have water withheld at the roots for a few weeks without inducing flagging or taking them into a cooler house.

Lapageria rosea and its varieties.—*L. rosea* superba and others are first-class greenhouse climbing plants for clothing pillars, rafters, walls, &c. I prefer to fasten the plants to the rafters, as they then show their flowers to greater advantage. If any work in connection with potting, retubbing, or planting is proposed, it should be undertaken forthwith, the plants making growth early in the spring. A compost consisting of equal parts peat and turfy loam which has had the finer particles sifted out, and a liberal quantity of sand, charcoal, and porous brick broken small, and passed through a fine sieve, is suitable. Abundance of drainage must be provided, as they are gross feeders, and during the growing season should be liberally supplied with water. Let all weak growths be removed; then for the purpose of destroying thrips, thoroughly cleanse the plants with a solution of 2 ozs. of Calvert's carbolic soap dissolved in 1 gallon of rain-water, to which 2 ozs. of petroleum should be added, applying it with a syringe, and afterwards thoroughly syringing the plant with clean water. During growth let the syringe be used daily. Keep a sharp look-out for slugs, which are fond of the young succulent growths.

Stephanotis floribunda.—Special attention should now be given to combating that troublesome pest mealy-bug, to which many stove plants, and especially *Stephanotis*, are so liable. The carbolic and soft-soap mixture recommended for killing thrips on *Lapagerias* may be used with safety if the directions accompanying it are properly carried out, and the work is done before growth commences. Let weakly growths be removed, and the plants afforded a liberal top-dressing of loam, soot, and cow-manure.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. I. MEASURES, Esq., Cambridge Lodge, Flodden Road, Camberwell.

Newly Imported Plants.—Orchids from the collectors in various parts of the earth are arriving, and among the earliest of these to come to hand are plants of *Dendrobium nobile*. The varied characteristics that have appeared among imported plants of late years, has caused this species to become much sought after, and consequently they realise much larger prices than was the case a few years ago; and besides being considered the most beautiful and useful of the early flowering deciduous species, the imported plants are mostly in fine condition, and if afforded careful treatment, they will expand a few flowers during the present year. Let such plants be examined carefully, clearing the pseudo-bulbs of decayed matter, and of everything that can afford shelter for insects; and remove decayed and useless pseudo bulbs and roots. The pots used should be just sufficiently large to contain the plants, and no more; and the amount of potting compost put round about the roots should be very small. Put the plants on a thin layer of sphagnum-moss spread over a large quantity (relatively) of clean crocks, and fill in with clean crocks. The compost may consist of live sphagnum-moss two parts, chopped moderately into fine pieces, and turfy-peat one part. Let this be pressed moderately firmly about the base, and place sufficiently strong sticks in the pot to support the plants. Let the newly-potted plants be placed in a somewhat dry place in the intermediate-house, and afford a very small quantity of water until new growth commences to make its appearance at the base, when more may be afforded.

Other much-imported Orchids.—These consist of *Lælia purpurata*, a very pretty and useful Orchid; *Cattleya intermedia*, *C. Leopoldi*, *C. Schilleriana*, *C. labiata*, a late-flowering Orchid, and *Sophranitis grandiflora*, all from some part of South America. All should be carefully cleansed and laid out separately where a fair amount of atmospheric moisture is present as will induce plumpness in the pseudo-bulbs and roots to push forth. When the roots are observed pot the plants forthwith, otherwise the former will get damaged in the potting. The

usual practice, and one that I prefer, is to pot the plants as soon as they have been purchased, thoroughly overhauling them for traces of the destructive *Cattleya-fly*, especially the plants of *Cattleya labiata*, a species to which this pest seems to be partial. Suspected plants should be cleansed with a strong mixture of soft-soap and warm water, by dipping them into it and afterwards rinsing them in clean warm water and hanging them in a position where they may soon drain dry. Isolate such plants for the space of at least one year, fumigating them meanwhile at regular intervals. In potting-up imported *Cattleyas*, afford ample drainage and but a small quantity of compost.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bicton, East Budleigh, Devonshire.

Mushroom-house.—Collect horse-dung daily till enough has been got together for the making of a bed. Throw this altogether into a flat heap $1\frac{1}{2}$ ft. thick to heat and become sweetened, turning the entire mass once in three days. In a week it will be ready for making into a Mushroom-bed. When constructing this, add one wheel-barrowful of drying loam to every six of manure, and thoroughly mix them together. The bed should be made about 3 feet in width and 15 inches in depth, and the materials should be firm as the work proceeds. When finished, put a bottom-heat thermometer or a test-stick into the materials, and as soon as the heat has declined to 80° , insert pieces $1\frac{1}{2}$ in. square into shallow holes made at 8 inches apart, and cover with a layer of finely sifted loamy soil $1\frac{1}{2}$ in. thick, which should have been placed in the Mushroom-house some time before, beating firmly with the back of a spade; then cover the bed with soft straw to retain the warmth and moisture. The warmth of the house may range from 55° to 60° . Afford a slight damping overhead every morning, using tepid water.

Cucumbers.—This crop is often cultivated upon hot-beds in frames from the middle of March onwards, and to have good, sturdy plants to put out by that date, seeds should soon be sown in $2\frac{1}{2}$ -inch pots containing light soil. Put one seed in each pot, upon a dash of sand, and cover them with a half-inch or so of soil. They will need a temperature of 65° to 70° , and if a little bottom-heat can be afforded them, so much the better. The pots might be placed in a shallow box containing a little moss underneath and around the pots, and stood over or near the hot-water pipes. The soil should be quite moist when the seeds are sown, and no water need then be afforded until germination has taken place. At that stage they should be removed to a light position, and may be afforded a shift into $4\frac{1}{2}$ -inch pots as soon as the roots have worked around the sides of the pot. Warm the soil before using it, and support each plant with a small stake. The atmosphere should be fairly moist, in order to prevent red-spider. The beds may be composed of fresh leaves and stable-dung in equal quantities, and should be thrown together into a large heap, and be turned over a few times before making the hot-bed. Allow 2 feet for lining around each frame. As soon as the heat has reached 75° , put a mound of loamy soil and a little soot in each light, 1 foot in depth, which should bring the surface of the soil to within 6 inches of the glass. Put one plant under each light, and afford a very moderate degree of shade.

Potatoes.—Where unheated brick pits of good depth are available, let these be filled at once to within 18 inches of the glass with freshly gathered leaves, well treading them as the work proceeds. A foot of fairly light soil will be sufficient to plant the sets in. Put the seed-tubers in boxes to sprout in a temperature of 50° , with a little leaf-soil between them, standing them upright, and reserving two or three sprouts from each only. These should be ready to plant in the pits in about a fortnight, and afford a crop which will be a succession to those started earlier. These should be afforded a temperature of 45° to 50° at night, kept near the glass, and the structure be ventilated on all favourable occasions. Add a top-dressing when the tops are sufficiently high, and support the haulm with a few branched sticks.

Brussels Sprouts.—A little seed should be sown for an early crop in the manner recommended for Cauliflower in last week's Calendar; or if a frame

on a slight hot-bed can be spared sow broadcast, but thinly, and keep the structure close until the seedlings are through the soil. Ventilate cautiously, and guard against mildew and slugs.

Leeks.—If there is likely to be a call for these early in the autumn, sow seeds in a pan or box in gentle heat, removing them to cooler quarters as soon as the seedlings appear. Prick off when large enough into other boxes, hardening, and finally planting them out in trenches prepared as for Celery.

THE APIARY.

By EXPERT.

Mild Weather and Bees.—The very mild weather we are having now will cause the bees to come out later on. Very weak and strong stocks left in the autumn will prove a failure unless attended to now, and with as little interference as possible. Have your candy-cake ready, and slip under the quilt as quietly as possible, so that the bees will hardly know you have been there. Any undue shaking will cause the bees unrest, and in consequence a good many will die. Care should be taken that the quilts are kept dry. However good a hive may be made, one will certainly find that the rain we have had for nearly four months has gone through. A good covering of newspaper is a good thing placed on the top of the quilts lengthways and across, and can be easily changed for more when damp, and your covers below will be found fairly dry. Of course this only applies when the roof of the hive is in good condition; when they are bad, and cannot be painted, nail a strip of wood on till a time arrives when it can be properly done. A piece of zinc will answer the same purpose, or a little felt. A little ventilation is desirable at this time of the year, but not too much. A sharp look-out should be kept for mice, particularly where straw skeps are used. The best method is to cover the skep with wire, a very small mesh being required to keep the mice from getting through. In the bar-frame hives, if you have no slides to the front, nail on a piece of wood which will only allow a bee to come out at the time, or a piece of queen-excluder zinc will answer as well. It is far better to know your bees are all right than to be in doubt, and disturb them.

Recipe for Candy-cake.—Into a tin saucepan put about three-quarters of a pint of water; let this boil, and gradually stir in 6 lb. of white lump-sugar; keep this boiling and stir to prevent burning. To test when it is done, dip your finger into cold water, then into the boiling sugar, and back again into the water; if properly done, it will be crisp and brittle. Or, if you are afraid of burning your finger, drop a little on a plate, and if it sets tolerably hard on cooling, and is only just sticky, it is done enough; if, however, it is still very sticky and soft, it must be boiled a little longer. When it is ready, take it off the fire, and stir it until it begins to set; place paper into saucers, and pour the candy into these—in half-an-hour it will be hard and ready for use. If it is not boiled enough, it will be soft and sticky in warm weather; and if burned, no amount of boiling will make it set hard. Burned sugar is injurious to bees if fed in cold weather.

AN ORCHID STUD BOOK.—We have received the following communication from Mr. C. C. HURST, of Burbage Grove, Hinckley:—"The large number of hybrid Orchids raised in gardens during the past few years, makes it almost impossible for one to keep in touch with their records. It seems desirable, however, that the history, parentage, and pedigree of the superior garden hybrids should be accurately and concisely recorded for future reference. To do this, I purpose to compile an Orchid Stud-book. The chief difficulty, however, is having to decide what to include; and after careful consideration I purpose to admit the following only:—I. All garden hybrids which have gained a First-class Certificate from the Orchid Committee of the Royal Horticultural Society since its formation. II. All garden hybrids which have gained a First-class Certificate from the Committee of the Manchester and North of England Orchid Society since its formation in 1897; III. The parents and ancestors of the above, whether species or hybrids."

APPOINTMENTS FOR FEBRUARY.

SATURDAY,	FEB. 2	Royal Botanic Society, Meeting. Société Française d'Horticulture de Londres, Meeting.
MONDAY,	FEB. 4	Annual Meeting of National Chrysanthemum Society.
TUESDAY,	FEB. 5	Kent County Chrysanthemum Society, Annual Meeting.
THURSDAY,	FEB. 7	Linnean Society, Meeting.
TUESDAY,	FEB. 12	Royal Horticultural Society's Committees, and Annual General Meeting of Fellows at Westminster.
FRIDAY,	FEB. 15	Royal Gardeners' Orphan Fund, Annual Meeting.
THURSDAY,	FEB. 21	Linnean Society, Meeting. Royal Botanic Society, Meeting.
FRIDAY,	FEB. 22	Sandy (Beds) Horticultural Society, Annual Meeting.
TUESDAY,	FEB. 26	Royal Horticultural Society's Committees, Meeting at Drill Hall.

SALES FOR THE ENSUING WEEK.

MONDAY, FEB. 4.—Roses, Greenhouse Plants, Hardy Border Bulbs and Plants, &c., at Protheroe & Morris' Rooms.
WEDNESDAY, FEB. 6.—Continental Plants, Tuberoses, Fruit Trees, choice Perennials, &c., at Protheroe & Morris' Rooms.
FRIDAY, FEB. 8.—Lilies, Gloxinias, Palms, Roses, Herbaceous Plants, Imported and Established Orchids, &c., at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—39° 3'.

ACTUAL TEMPERATURES:—

LONDON.—January 30 (6 P.M.): Max. 41°; Min. 34°.

January 31—Slight frost, dull, cold.

PROVINCES.—January 30 (6 P.M.): Max. 41°, Isle of Man; Min., 34°, Shetlands.

Medicinal
Vegetable
Antiseptics.

The numerous paragraphs in the Press at the present time, in reference to the plague, recall to our mind the fact that England

has had to combat or endure the same dire visitation on more than one occasion, previous to the great outburst in London in the seventeenth century.

With regard to preventions and remedies formerly adopted, though a large proportion were utterly useless and of fictitious value, being foisted on a terrified and credulous people by impostors; yet there was a very general belief in a certain class of vegetables and their products, which would seem to have something to say for themselves. These were especially plants characterised by possessing powerful odours.

These plants were used, just as they are, fresh or dried, so that their scent was diffused in the air; or they were sometimes burnt, so that the smoke ascended; or, again, they were made up into "pomanders," or scent-balls, to be carried about the person; or as powders in small scent-bottles. On the other hand, they were made up into drugs to be taken internally.

Nothing, of course, was known in former days of microbes, now regarded as the sources of many fevers, pestilences, and plagues; but plants and vegetable products were undoubtedly used as disinfectants, even if it was done without knowing the rationale. In fact, LISTER's antiseptic spray for wounds was anticipated in other ways thousands of years ago.

The reader will remember how the Good Samaritan of the parable is described as pouring oil and wine into the wounds of the man who had fallen among thieves. The object of the wine was, presumably, from the discovery that the spirit prevented the wound from festering; or, as we should now say, the spirits of wine was an antiseptic against bacteria or other microbes.

In the fourteenth century of our era, in a medical work containing various prescriptions, we find "a drynke for the pestilence" to con-

tain Fever-few (*Chrysanthemum Parthenium*), Mugwort (*Artemisia vulgaris*), Maythe (*Anthemis Cotula*, our "stinking Mayweed"), all three strongly-smelling plants, and others, mixed with stale (i.e., old), ale. "And gif (if) the seke (sick) drynke vi. sponful at ones (once), it schal distroye the corrupcion and sauen (save) the man or wumman, whethin (whichever) it be."

So, too, we find various ointments for cleansing and healing wounds composed, with other ingredients, of vervain, resin, mastich, and frankincense also being mixed with wine as a lotion.

A disinfecting powder for dressing wounds was called *recheles* (from Anglo-Saxon *reccels*. It was a kind of incense, from Anglo-Saxon *recc* "smoke.") Thus, e.g., it was an ingredient in "a goud poudre for to sle (slay) the festour (fester)."

It was also much used for tooth-ache then, just as tincture of myrrh is now. Sage and salt, baked into cakes and powdered, was used as a tooth-powder.

In the sixteenth century, it was recommended to "take a sponge and dip it in vinegar and rose-water mingled, or else in vinegar wherein Woormewood or Rue have bin boyled in, and vse to smell often thereto."

The following receipt, in a work dated 1707, is for a pomander or scented ball to be carried about:—"Take fine Cinamon, Cloues, Amber, Nutmegs, Storax, Camamill, Iuniper, and red Roses, and beate them all together, and make a powder thereof, and then mingle the same with rose-water, and so make a pomander thereof."

As a drug to be swallowed was a mixture of Sage, honey, treacle, five or six spoonfuls taken fasting. "It will preserue you from taking of any euill Ayres all the day after wheresoeuer you go."

Of another receipt, the ingredients were Rue, Elder, red Sage, white wine, case ginger:—"Drinke a good draught thereof both morning and euening, for the space of 9 daies together, and by God's grace it wil preserue you."

The celebrated antidote taken by MITHRIDATES against being poisoned was composed of a mixture of Figs, Walnuts, Rue, and salt.

In a work entitled *Loimologia* (1720), describing the great plague of London in 1666, and giving many remedies against pestilence, the following plants and vegetable products are mentioned: Aloes, Cinnamon, Myrrh, Lign-Aloes, Cloves, Mace, Mastic, with white wine and water. They attributed a plague or pestilence to an "Aura" that was poisonous, very subtle, and contagious, chiefly arising from the corruption of the "nitrous spirit of the air."

Fumigations were resorted to in order to destroy the supposed poison, for which purpose "such things ought to be used as exhale very subtile sulphurs, as the spicy drugs and gums. Such drugs as are from a vegetable production and abound with subtile, volatile parts, are of service to be exhaled into the air this way, both by their fitness to join with and cover those venomous spicula that are on float." The author then enumerates such as Storax, Benjamin, and Frankincense, and all the aromatic roots and woods, &c.

LINNÆUS, in his *Philosophia Botanica* (translated by ROSE as "The Elements of Botany," 1776), recommends similar vegetables, &c. He says: "Sweet-smelling plants, as Wood-roof, drive away moths and other destructive vermin, and when chewed, preserve people from infectious disorders."

In the early decades of this century, herbs were much used to counteract jail-fever; and a bunch of Southernwood and Rosemary was always laid on the dock-rail beside the prisoner.

Some years ago Dr. KLEIN, our celebrated bacteriologist, was asked to give his opinion upon the value of strong vegetable scents as disinfectants, and he was good enough to reply as follows:—"I daresay you know that some plants, owing to their strong odours, have a certain amount of antiseptic potency, though it differs considerably in different cases. Among these may be mentioned essence of Cinnamon, Camphor, Peppermint, Thymol, and Eucalyptol, and possibly Mustard. I do not mean merely antiseptic potency *quâ* substance itself, but also in a volatile state."

Subsequently there appeared in the *Bacteriological World* the results of experiments by M. OMELTSCHENKO which confirm the view that the vapours of essential oils exercise a bactericidal action. He found that the bacillus of typhus was killed by air containing the vapour from oil of Cinnamon, or oil of Valerian, in forty-five minutes. The bacillus of tuberculosis required twenty-three hours for oil of Cinnamon; and oil of Lavender and oil of Eucalyptus took twelve hours to produce fatal result to the microbes. He classifies the oils according to their strength as follows:—Cinnamon, Fennel, Lavender, Cloves, Thyme, Mint, Anise, Eucalyptus, turpentine, Lemon, and Rose, the last two being very weak in disinfecting power.

If these last results of science should prove to be true on further examination, they will simply corroborate the usages of our forefathers; who employed precisely the same things for the same purposes, but without knowing the reason "why."

"GARDENERS' CHRONICLE."—We are requested by the publisher to state that the office of this Journal will be closed on Saturday, February 2, in consequence of the national mourning.

COVENT GARDEN MARKET.—Our readers may be reminded that owing to Saturday, February 2, having been proclaimed a day of national mourning, this market will not be open, the usual Saturday's market having been held on the previous day.

THE ROYAL HORTICULTURAL SOCIETY.—We learn that the Society has forwarded to Windsor a wreath in respectful homage to the great QUEEN who was for so many years the Patron of the Society.

NATIONAL CHRYSANTHEMUM SOCIETY.—The annual general meeting of the members of this Society will be held at Carr's Restaurant, 265, Strand, on Monday next, February 4, at 7 P.M. Mr. CHAS. E. SHEA, Vice-President, will take the Chair. In addition to the usual business, there will be considered the following alterations and amendments to rules, proposed by Mr. C. E. WILKINS:—Rule III. Management, Second line, to strike out "Vice-Presidents." Rule VIII. Election of Fellows. The last three lines to read: "Candidates for Honorary Fellowships must be nominated by the Executive Committee, and their election shall take place at a general meeting of the Society." It is hoped that there will be a good attendance of members on this occasion, and it is rumoured that important questions may be discussed.

M. LAURENT.—We learn with great pleasure that Professor EMILE LAURENT, of the State Agricultural Institute of Gembloux, has been elected lately a member of the Royal Academy of Science of Belgium. M. LAURENT is well known for his original work in botanical science.



FIG. 31.—*PHAIUS TUBERCULATUS* (TRUE), RECENTLY INTRODUCED BY MR. WARBUR, FROM MADAGASCAR. (SEE PP. 79 AND 82.

LINNEAN SOCIETY.—At the meeting of this Society, to be held on February 7, a paper will be read by Mr. H. M. BERNARD, M.A., F.L.S., "On the Necessity for a Provisional Nomenclature for those Forms of Life which cannot be at once arranged in a Natural System." The author contends therefore that the present exclusive adherence, for all purposes of description, to the Linnean binomial system which implies classification, when classification can only be attained as the end and crown of our work, is philosophically absurd and practically disastrous. The absurdity of starting by assuming what it is the object of all our researches to find out is self-evident; while the hindrance to progress due to waste of energy, to the assumption that the goal is attained, to the natural indisposition to rearrange previous classifications, to the synonymies which continually grow and must ever continue to grow as our knowledge which advances in spite of our methods compels us to bring our premature classifications nearer and nearer to the natural order—only need to be mentioned to be equally self-evident. A provisional nomenclature is therefore proposed in order to make work possible in those groups in which, as in the Corals, classification, except in its barest outlines, is premature. The author suggests that this consist (1) of the existing generic name (or when that cannot be discovered, the family name); (2) of the locality in which each specimen has been found; (3) of a fraction which can be understood from the following illustration:—"Porites, Singapore $\frac{1}{10}$ " would mean that there are twenty apparently distinct forms of Porites known to occur at Singapore, and the particular one referred to is that which was described and figured as number 4. If a new Porites be found in the same locality, i.e., a Porites not immediately referable to any yet figured, its designation for reference would be "Porites, Singapore $\frac{31}{10}$." The formula which shall be ultimately agreed upon ought to be formally adopted.

BARON HRUBY'S COLLECTION OF ORCHIDS.

—We learn that the Baron is parting with his well known collection of Orchids owing to the difficulty that he unfortunately experienced in obtaining the services of skilled cultivators; and through the good offices of the Lord High Steward, His Serene Highness FÜRST VON MONTENUOVO, the collection will pass by purchase into the possession of H.I.M. KAISER FRANZ JOSEPH, and be united to the collection already existing at Schönbrunn, which, with this addition, will number 1400 examples, being one of the most extensive on the continent. The Schönbrunn collection of hybrid Orchids will shortly be enriched by an immense number of hybrids in great variety, which have already excited the interest of hybridists in England and Belgium.

WILL.—By his will, Mr. PHILIP CROWLEY, F.L.S., F.Z.S., of Croydon, who died on Dec. 20 last, and whose collections of birds' eggs and of exotic butterflies are among the largest known to exist, bequeathed to the trustees of the British Museum, from his natural history collections, whether of eggs or insects or other objects, all up to four specimens, and of eggs, if in clutches, four clutches, and if there should be more than four specimens in his collection the Museum should be allowed to take half the surplus, and should any species be useful or interesting by reason of variety or locality the Museum is to take the whole series, Mr. CROWLEY'S idea being that the Museum might secure what was really useful, but it should not take simply duplicates. For example, it should have the whole series of cuckoos with the eggs of the foster parents.

PRUNUS DAVIDIANA.—Among the early-flowering trees and shrubs of our gardens are the Almond; and so far as we know the earliest of these is *Prunus Davidiana*, a native of China, introduced to Europe by the Abbé DAVID. There are white and pink-flowered forms of the species. The plant was first

described by M. CARRIÈRE in 1872. M. CARRIÈRE recognised that it was distinct from Peaches and Apricots, and this opinion was upheld by M. FRANCHET. A flowering shoot was figured in these pages on April 23, 1892, p. 529, from a plant shown at a meeting of the Royal Horticultural Society by Messrs. J. VEITCH & SONS. Our correspondent, Mr. T. H. SLADE, gardener at Poltimore Park, Exeter, communicates the fact that the white form is at the present time in flower at that place.

DEATH OF MRS. CHARLES TURNER.—This venerable lady, who was widely known throughout the horticultural profession, died at the Royal Nursery, Slough, on Tuesday, the 22nd ult., at the age of eighty-two. Mrs. TURNER was born at Eton on May 8, 1819, and was, therefore, a few days older than Her Majesty the QUEEN, and died on the same day. Mr. and Mrs. TURNER were married in Eton College Chapel in 1844, and it was the last wedding ceremony held in that historic chapel. Five years afterwards, Mr. Turner became the proprietor of the Royal Nursery, and it was there Mrs. TURNER died, after a residence of fifty-two years. Her funeral took place in the parish churchyard of Slough on the 25th ult. The QUEEN occasionally visited the nurseries—on one occasion to see the Crimson Rambler Rose.

"BOTANICAL MAGAZINE."—A set of this publication from the beginning in 1787 till the year 1899 was sold on Tuesday last at STEVENS' Rooms for £106. Complete sets are now rare.

"WILLING'S PRESS GUIDE."—The twenty-eighth annual issue of this publication, useful to all engaged in literature, is now before us, and seems fully up to its usual standard. In addition to an alphabetical list with brief particulars of the newspapers and periodicals in the United Kingdom, there are, as with former issues, further lists in which these publications are grouped according to the opinions maintained by them, or the subjects with which they deal. *Willing's* is a handy address and reference work that should be on every office table. The publishing offices are at 125, Strand, London, W.C.

ALTERATIONS AND IMPROVEMENTS AT KEW.

—From a recent number of the *Journal of Kew Guild*, we take the following account of alterations and improvements effected at Kew in 1899-1900:—"Except the re-roofing of the central portion of the temperate-house, no structural work of importance has to be recorded for the period under notice. The houses generally are now much better suited for the plants they contain than they were formerly. The sheds, yards, &c., also have been greatly improved in accommodation and convenience. The old 'North' and 'New Holland' houses in the Melon-yard have been replaced by a useful span-roofed house similar to the relief-house. The Aroid-house (No. 7) has been renovated as regards the structure by replacing the old small-pane sashes with others of a lighter and better-looking pattern, and, as regards the inside, by the re-making and replanting of the beds. Nos. 2 and 3, since they were rebuilt and the green glass replaced by clear, have proved almost too well suited for Fern culture, the plants growing so luxuriantly that it is becoming difficult to afford enough space for them. No. 4 is equally good for the plants which are permanently grown in it, whilst as an exhibition house it is still without a rival. The Orchid-houses and the Nepenthes-house continue to give satisfaction to the cultivator. The temperate house, including the Mexican and Himalayan divisions, are rapidly assuming the character which has been the aim of the authorities ever since Sir WILLIAM HOOKER pointed out to the Government forty-five years ago that the gardens could not be deemed complete till the trees and shrubs of temperate (and subtropical) climates were as well provided for as the tropical plants, by affording them sufficient space, light, and temperature. The arboretum is being steadily improved,

both in regard to the keep and to the comprehensiveness of the collections—work which is much facilitated by a greatly improved water-supply, and the application annually of enormous quantities of loam and manure. Similar operations in the herbaceous and alpine department have had equally satisfactory results. A new set of filter-beds has been built near the old ones at a cost of about £2000. To meet the wishes of cyclists, many of whom frequent the gardens, a large shed has been provided close to the main gate, where machines may be left in the charge of ex-gatekeeper NIXON, at a charge of 2d. each. The shed was opened on April 14, and closed again on October 31. During this period, 6326 machines were deposited there, an average of about thirty-one per day."

MR. E. J. THOMAS writes:—"I have now left St. Andrews. I completed my M.A. degree there last October by taking First-class Honours in Classics. I am now (March, 1900) at Oxford, and am an assistant on the editorial staff of the *New English Dictionary*, under Dr. MURRAY. As the work will last for at least ten years more, I am likely to be here for some time. The only one now at Kew who was a gardener there when I was (1895) is J. CLARK. I still correspond with HOLLAND at Old Calabar, ABBOTT at Matlock, and AUTON, who sent me a German post-card last September." *Journal of Kew Guild*.

"THE LADY'S MAGAZINE."—This is a new-comer among magazines, as the first number appeared with the first month of the new century. It contains plenty of fiction, for which the public taste appears to be insatiable, and many more solid articles. There are abundant illustrations, and a prettily got-up paper on "The Photographer in the Fields." Well-known names appear among the contributors, and if the future numbers of the magazine keep the bright and fresh tone of this early specimen, we can hopefully prophesy a successful career for it. The publishers are "PEARSON'S," Henrietta Street, W.C.

MR. SMYTHE.—Mr. W. SMYTHE, for upwards of twenty-five years head-gardener to W. NICHOLSON, Esq., Basing Park, Hants, is about to retire. He has recently had a very severe illness, brought on in the first place by sunstroke, but he has so far recovered as to be able to get about again. It is also very gratifying to know that his employer, whom he has served so faithfully and well, has settled on him a liberal pension. Mr. SMYTHE will be well remembered by readers of the *Gardeners' Chronicle* as the raiser of several hybrid *Tacsonias* (described in these columns, and one of which was exhibited on Tuesday last at the R.H.S.), as well as a few years ago of a new dwarf Bean. During his quarter of a century at Basing Park, he has carried out numerous alterations and improvements, notably the construction of a very beautiful hardy fernery, where he got together a fine collection of rock plants. To his young men he has always been ready to give kindly advice and assistance, and nothing gave him greater pleasure than to see his efforts to improve their position taken advantage of and appreciated. Mr. SMYTHE has secured the good wishes of his staff, and of every one connected with the estate.

THE HÜGEL MONUMENT AT HIETZING.—The Amateurs' and Gardeners' Club at this pretty suburb of Vienna, has come prominently before the Austrian public in recent years by its efforts in holding flower shows in Hietzing and Vienna, with a view of obtaining funds wherewith to finish the monument to Baron HÜGEL; and the erection of the monument will likewise be undertaken by the Hietzing Amateurs' and Gardeners' Club. It may be mentioned in this connection that the Club, in conjunction with the Imperial and Royal Horticultural Society, of Vienna will hold, on the anniversary of its foundation twenty-five years ago, a horticultural exhibition in the Austrian metropolis in 1901, the profits of which will go towards establishing a fund for invalid and necessitous gardeners, their

widows and orphans, without distinction of nationality. His Imperial and Royal Highness Archduke FRANZ FERDINAND, who is Patron of the undertaking, hopes that every gardener will do his best to bring horticulture in the Empire to that state of perfection, which, for national economic reasons, is so desirable and important.

FRUIT FROM THE CAPE.—The officials of the Union Castle R.M. steamship company inform us that the *Norman* arrived from the Cape on the 11th ult., bringing twenty boxes of Plums and ten boxes of Apricots. On the 19th the *Dunvegan Castle* arrived with thirty-one boxes of Plums, and 387 boxes of Apricots; all, we believe, were fairly well disposed of.

AUSTRIAN EXPEDITION TO BRAZIL.—The Treill Institution has made it possible for the Imperial Academy of Arts and Science to send an expedition in the present year to comparatively unknown regions of Brazil, under the leadership of Director Dr. RICHARD RITTER VON WETTSTEIN. Other members of the expedition are Dr. VICTOR SCHIFFNER, Dr. FRITZ RITTER VON KERNER, and the head gardener of the University Botanical Gardens in Vienna, AUGUST WIEMANN, as plant conservator. Great results are expected from the expedition.

SALE OF CARBOLIC ACID.—The following circular has been issued by the Local Government Board:—

"Local Government Board,

"Whitehall, S.W., January 10, 1901.

"Sir, I am directed by the Local Government Board to enclose a copy of an Order made by the Lords of Her Majesty's Most Honourable Privy Council approving a resolution passed by the Pharmaceutical Society of Great Britain that liquid preparations of carbolic acid and its homologues containing more than three per cent. of those substances should except in certain cases connected with agriculture and horticulture, be deemed poisons within the meaning of the Pharmacy Act, 1868, and the Second Part of Schedule A to that Act.

"The Board have reason to believe that, in a very large number of cases where local authorities disinfect or procure the disinfection of premises and things which have been exposed to infection, the disinfectant employed is carbolic acid. They desire to take this opportunity, therefore, of pointing out that whenever the disinfectant employed is carbolic acid, or any other poison within the meaning of the Pharmacy Act, 1868, only bottles similar to those prescribed by the Regulations adopted by the Pharmaceutical Society of Great Britain, and approved by an Order of the Lords of the Council dated the 31st January, 1899, should be used to contain it.

"A copy of the last-mentioned Order is also enclosed.

"I am, Sir, your obedient Servant,

"S. B. PROVIS, Secretary.

"The Town Clerk, or Clerk to the District Council."

TO SIR W. T. THISELTON-DYER.—We are requested by Mr. BRITTEN to publish the following apology:—"With reference to the editorial notes contained in the *Journal of Botany* for January, 1901, pages 47 and 48, reflecting on you and your work in connection with the preparation of the *Flora of Tropical Africa*, I desire to offer to you an expression of my sincere regret for the same. The preparation of the *Flora of Tropical Africa* was not committed to you until the year 1891, and my statement that it has been in your hands since 1872 is incorrect. I sincerely apologise to you for having imputed to you unnecessary delay in its preparation, and I desire to withdraw all reflections and imputations affecting you of every kind whatever contained in the editorial notes referred to. JAMES BRITTEN.—Dated this 26th day of January, 1901."

"THE GARDENER."—It is pleasant to be assured of the good will of our readers and contributors; it is very pleasant to read the congratulations of our colleagues of the Press. *The Gardener* has an appreciative paragraph on our Diamond Jubilee, for which we tender our hearty thanks.

COLONIAL PUBLICATIONS RECEIVED.—*The Austral Cultivist*, *The Australian Gazette*, also *The Rose Growers' Chronicle*, vol. i., Nos. 10 and 11, October and November, 1900 (Melbourne). This paper is published in the interests of the Poultry Farmers' Committee of Victoria, the

National Rose Society of Victoria, the Victoria Silk and Rural Industries Association, the National Bee-keepers' Committee, and the Scent Farmers' Committee.—*New Zealand Department of Agriculture*, Eighth Annual Report, for 1900. The Secretary, Mr. J. D. RITCHIE, reports that "the harvest of 1899—1900 has been satisfactory in so far as the yield of grain is concerned, but it is to be regretted that the price of Wheat especially leaves a very small margin of profit. There is a decrease of 1,620 acres under Potato cultivation, the average yield is less, and the prospect for this crop is far from promising. Among the Vines the efforts to eradicate Phylloxera have been most successful." The bulky volume is further devoted to detailed reports on agricultural matters.—*Provincial Government Crop Report, Nova Scotia*, November, 1900. According to the summary "the principal field crops have this year fallen a little, some of them considerably, below the average. The fruit-crop was a good one, but a heavy wind-storm in September did much damage, and Oats and other grain were greatly injured by the same gale. About the middle of October a most unusual thing occurred in the shape of a storm of snow, and quite a heavy frost, which did a lot of harm to late field crops."—*New Zealand Department of Agriculture, Division of Biology and Pomology*, Eighth Report of the Government



FIG. 32.—PHAIUS SIMULANS, ROLFE (TUBERCULOSUS).

Biologist, T. W. KIRK, 1899—1900. This publication includes the reports of fruit experts, and Phylloxera inspectors, and is indeed a separately published extract from the larger volume of New Zealand Reports previously mentioned.

PUBLICATIONS RECEIVED.—*Peach Leaf Curl: its Nature and Treatment*, by Newton B. Pierce. This forms Bulletin No. 20 of the United States Department of Agriculture, Division of Vegetable Physiology and Pathology, and is a publication (with excellent illustrations), of about two hundred pages devoted to the study of this troublesome disease.—From the same Department and Division come also: *Spot Disease of the Violet*, by P. H. Dorsett; and, *Some Diseases in New England Conifers*, a Preliminary Report by Hermann Von Schrenk, being Bulletins 23 and 25 respectively.

PHAIUS TUBERCULOSUS, &c.

THE differences between the newly introduced Phaius (fig. on p. 77) and *P. tuberculosus* of gardens=*P. simulans* (Rolfe) (fig. 32), are set forth by Mr. J. Weathers as follows:—

<i>P. TUBERCULOSUS.</i>	<i>P. SIMULANS, ROLFE.</i>
<i>Pseudo-bulbs.</i> —Ovoid, ringed.	<i>Pseudo-bulbs.</i> —Cylindrical stem-like, branching.
<i>Leaves.</i> —Large plaited, 2 to 3 feet or more long—a native state.	<i>Leaves.</i> —Much shorter and narrower.
<i>Flowers.</i> —Rather larger, but otherwise very similar in colour and markings.	<i>Flowers.</i> —Rather smaller, but otherwise very similar in colour and markings.
<i>Culture.</i> —Easy. An intermediate-house will suit <i>P. tuberculosus</i> well. Growth free and vigorous.	<i>Culture.</i> —Notoriously difficult. Requires greater heat and moisture.

THE CONSTRUCTION OF TOMATO-HOUSES FOR MARKET PURPOSES.

IN reply to an enquiry made by a correspondent, "W. W." lately, concerning Tomato-houses, we publish the following, kindly furnished by our experienced contributor Mr. H. W. Ward:—

"Tomato-houses in market gardens vary in width from 20 feet to 30 feet, and in length from 100 feet to 200 feet, according to the available space. The rafters for these widths should be 14 feet and 16 feet respectively, and should, like all the timber employed in the erection of these and such-like houses, consist of the best, well-seasoned yellow-deal, excepting the valley-gutter plates, which should be pitch-pine, this being 12 inches by 1½ inch, and tarred on both sides. If 'W. W.' contemplates erecting two or more houses for the production of Tomatoes, or any other description of fruit-bearing or flowering plants requiring the same atmospheric temperature, the only walls that need be built, whether the number of houses be two or fifty, are the two outside ones, in addition to the end-walls. Brick piers, of 9 in. square, built on concrete footings at about 7 ft. apart, for supporting the above-mentioned valley-plates, on which the wall or gutter-plates for supporting the rafters are nailed—some growers prefer the wall and ploughed gutter-plate all in one piece—will give complete stability to the block of houses thus built. Economy, combined with lightness and durability of work, must necessarily be observed in all matters of commercial horticulture. This being so, the side and end walls should consist of 4½-inch brickwork with 9-inch piers, built, like the walls, on proper footings at 8 feet apart, the piers being formed on the outside face of work in order to withstand lateral pressure arising from the weight of the glass-covered roof. If the walls are from 2½ to 3 feet high, measuring upward from the floor-line of the house, they will afford ample space and angle in houses of the widths and lengths of rafters indicated above, and the houses will be suitable in every respect for the production of Tomatoes. Iron side-stays should be used to give additional strength to the side walls; these, consisting of ½-inch by 1-inch bar-iron, and about 4 feet long between the two cranks, should be secured to the wall-plate with 'coach-bolts' at intervals of about 15 feet, the bottom end being let into the border in holes sufficiently deep to take a good-sized bucket of concrete, composed of two parts finely broken bricks to one of cement in each. The items of wood necessary to the erection of houses of the description mentioned above, in addition to the valley plate, are as follows:—wall and end plates, 3 inches by 4 inches, bevelled; end rafters, 3 inches by 4 inches; bars or intermediate rafters, 1½ in. by 3 inches; end and division-bars, 1½ in. by 3 inches; ridge 1½ in. by 6 inches (this being grooved in a line with the bed of the rafters to receive the top square of glass); capping, 1 inch by 4 inches; drip, 1 inch by 3 inches; door frames, 3 inches by 4 inches (the lintel being bevelled to prevent water lodging thereon), with oaken sills the same size; doors, 6 feet 6 inches by 2 feet 8 inches, the doors being either all wood, hung on hooks and Ride's hinges, or they may be made of one-half glass, but for market purposes doors made of all wood are preferable. Purlines should be employed on either side amid rafters in all houses over 18 feet wide, these being supported by vertical posts 2 ins. by 3 ins., resting on brick piers at intervals of 10 feet. The purlines should be 2½ inches by 3½ inches, bevelled, to admit of the rafters resting properly thereon when nailed thereto. Each house should be provided with a liberal supply of roof-ventilators, these being hung from the ridge on either side at intervals of five bays, the ventilators on one side being fixed angle-wise to those on the other side, these being worked throughout by continuous gear. An improved article in this direction, having a curvilinear lifting and lowering rod, is supplied by some Woolwich man, whose name I cannot remember just now; but should this note meet his

eye, I should advise him to lose no time in sending his name and address, together with particulars of his patent, to the publisher of the *Gardeners' Chronicle*. In addition to the roof ventilators, provision should be made in the side walls—say, at 8 feet apart—for the free admission of fresh air to the occupants of the house or houses, as the case may be, the apertures being furnished with sliding or hanging shutters. The apertures may be from 2 to 3 feet in length, and 9 inches wide. The woodwork should receive two coats of good white-lead paint before being fixed, and one more afterwards. The roof should be glazed with glass 21 oz. to the foot, using panes 18 inches wide, and 22 inches long, these being bedded in the best white-lead putty, and sprigged on top, putting four brass spriggs to each pane. The houses thus built for Tomato-culture should be provided with four rows of 4-inch pipes each—that is, a flow should be suspended by hooks attached to wall-plates, returning on either side the central pathway. For particulars as to heating arrangements and making the joints of hot-water pipes in forcing and other houses, we may refer 'W. W.' to the *Gardeners' Chronicle* for January 22, 1898, p. 52, wherein he will find full information on the subject.

"With regard to the question of rating a glass-house 100 feet by 20 feet at 24s. per year, it would appear to us that you have little, if any, cause to complain—that is, so long as a glass-house continues to be rated on the same basis as a dwelling-house."

HOME CORRESPONDENCE.

GREENING v. NON GREENING OF POTATO SETS.

—Notwithstanding all our scientific and cultural knowledge, and the various experiments by spraying of poisonous compounds to counteract the ravages of *Peronospora infestans* on the Potato-crops, the disease seems to prosper. This is so more especially during warm and moist summers, and the only course open, it seems to me, is to fortify the plant against its attack by the introduction of new varieties. This is in direct antagonism to the remarks of some of your correspondents on the subject, but experience and close observation have proved the truth of the contention: that every new and special variety of Potato, though strong in constitution as most seedlings are, has, after the lapse of twenty-five years, becomes, through constant cultivation, less capable of resisting disease; its quality may improve with age, but its vigour is less, and it is more difficult to grow. Proper cultivation and rotation of crops may, to a certain extent, prolong the age of any given variety, especially where care has been exercised in selecting "seed" free from disease, but the results are the same. The greening of "seed" Potatoes previous to storing, with certain qualifications, has something to recommend it, and is practised by many gardeners where only limited quantities have to be dealt with. The merits of the process are as follows: Early Potatoes can be lifted before the disease has made much headway amongst them; or, in other words, before the crop is fully matured, but just when the tubers part easily from the stems by a gentle shake when lifting. This is a subject which has not received sufficient attention; these early-lifted Potatoes eat well, and by greening them for "seed" keep well till wanted for planting another season. The Potato-disease does little harm till the middle of August, and by that time many of our early Potatoes will be almost ripe, some of them quite so, notably Sharpe's Victor, the Ashleaf varieties, and Early Puritan, &c. Should disease appear in the breadths at this time, I would not hesitate to lift all the early sorts, some of which at least will have been lifted by this date, and place them in pits for immediate use. The medium-sized tubers I would place in the sun in single layers for a week or two, till they are greened by turning on both sides for seed during the coming year, because Potatoes lifted at an early date will not keep well if not properly ripened. By this process, the antheridia and oogonia found on the lateral branches of the mycelium of *Peronospora*, which may have already entered the tissue of the leaf, have not had time to reach the tubers, where, in the ordinary course, the fertilised oogonium would

develop or mature into what has been called the "resting spore." [This is still doubtful. Ed.] The consequence is, that the Potato-set starts into growth next season with a clean sheet, and the chances of attack by disease are greatly reduced. I do not claim that this procedure strengthens the tuber, or that it makes the Potato more productive, any more than that it is less liable to frost; but it does make a slightly immature Potato keep better, and often saves a valuable early variety from complete annihilation. Chlorophyll in the green Potato, as your correspondent, Mr. Gaut, suggests, does not pass to the young or embryo plant, as chlorophyll does not pass from cell to cell, but is the direct result on vegetation of sunlight and air; the greened Potatoes, however, retain the chlorophyll after planting in the soil. With late Potatoes we have less difficulty, having due regard to the selection of sets free from disease, and to the cultivation of standard sorts, such as Magnums, Bruces, Up-to-Date, &c., all less liable to disease, but even these will have their day; and the time has come when the Government ought to give great encouragement to the raising of new varieties—the question is a national one. *W. Minty, Ardross Gardens, Alness, N.B.*

NEW-OLD POTATOS AT CHRISTMAS.—I do not know if any of your numerous readers have ever given the following method a trial, which a lady visiting here asked me to try two years ago. Lift as many young Potatoes in June or July as will fill a 2 or 3 lb. biscuit box, bury the box about 1 foot deep in the ground, and at Christmas when lifted and cooked they will be found to have retained the flavour of a new Potato. I could not believe it would be so when asked to try the method, but I tried after giving it two successive trials that such is the case. I intend next summer to bury a larger quantity. *J. Adams, Lynchmere Gardens, Haslemere.*

VIOLETS.—Your correspondent, writing under the signature of "California," at p. 36 of the *Gard. Chron.*, asks for information regarding varieties of Violets "which make runners," and of those which, like Wellsiana, "make but few, if any." In reply, I beg to say that my experience in the cultivation is that all Violets with which I am acquainted make runners freely enough when planted in light, rather than heavy soils, well enriched with mild manure, and kept uniformly moist at the roots during growth. These varieties include Princess of Wales, Princess Beatrice, The Czar, California, Wellsiana (five very excellent single-flowered varieties, with the large, highly fragrant blooms, borne on long foot-stalks), Marie Louise, De Parme, Neapolitan, Victoria Regina, and Comte de Brazza. Of these ten varieties, perhaps Wellsiana and Victoria Regina are the least productive of runner growths; still they are by no means shy in this respect when given generous treatment, in the way indicated above. During the last few years, owing to the character of the soil in some localities, the absence of rain, and the semi-tropical weather, I noticed that even the most free-growing varieties made very little growth, while the same varieties, under suitable cultivation for such seasons, made runners in abundance, and formed large crowns, which, in due time, yielded a long continued succession of large flowers. *H. W. W.*

PEACH STANDARDS.—Some time ago I noticed in the *Gardeners' Chronicle* some remarks about Peaches ripening in the open quarters of Mr. C. Turner's nursery at Slough, and as I do not recollect any notice of Peaches grown as bushes in all my long reading of the *Gardeners' Chronicle*, and as there has been nothing said on the subject since Mr. Ward's remarks were printed, I thought it might be of interest to some of your readers if I gave a short account of the trees grown in bush form in the late Mr. R. D. Blackmore's garden at Teddington. So far as I could judge on seeing them, the trees had hardly ever been pruned, and the older ones had become large and ungainly, but the crop in 1900 was a heavy one, and the size and quality of the fruit were really good. Some of the younger trees were handsome in appearance, the fruit excellent. The only Nectarine of bush form was one of Lord Napier, the fruit crop on which was heavy, but it did not finish so well as the Peaches, possibly through the fruit not having been thinned sufficiently. The varieties of the older trees of Peaches included Waterloo, Amsden, and Alexander; the younger trees included Hale's

Early, Rivers' Early York, Crimson Galande, Godhawk, and one labelled Desdemona, not a very healthy tree. The date of the first gathering of fruits was in 1891, August 10; in 1893, July 7; in 1894, July 24; in 1895, July 24; in 1896, July 17; in 1898, August 2; and in 1900, July 17, the dates omitted in this record were the seasons in which the crop was too small to send to market, and of which no record was kept. In three out of the seven years nearly 8,000 fruits were sent to market, and they fetched as good prices as fruits from the walls, and were in every way as good as those. By this it would seem that there is no reason why the luxury of a few good Peaches should not be within the reach of all who have room to plant a tree or two. *John Bester, Swanley Junction, Kent.*

GODETIAS.—It may interest your readers to hear of the wonderful keeping properties of Godetia. I plucked a large branch of rose-coloured Godetia in the first week of October, and have it still. It was placed in a tall jar of water, the water changed every week. There has rarely been a fire in the room it is in, although there has been frost several times. Every flower-bud has come out, and as the first flowers slowly faded, after many weeks, they were picked off. There are still eight blossoms of a pale rosy hue, looking as fresh as if plucked last week. Two pots of the same, potted rather later, and kept in the house, did fairly well till the end of the year. *C. G., N. B.*

APPLE NEWTON WONDER.—Seeing Mr. Taylor's note about this Apple in a recent issue, I am induced to send a line in reply. To many people the parentage of an Apple is not a matter of much importance, providing the Apple itself is good, but to others who take an interest in such things, correct information is necessary if it is to be of any value. One frequently hears that an Apple was raised from a pippin sown from such or such a variety; sometimes even the male parentage is given, but when the seedling is some ten or fifteen years old, memory is apt to be very treacherous, and unless notes were made at the time of sowing, and a record kept, the parentage is generally a doubtful matter. In the case of the Apple in question, Newton Wonder, I made a journey to see the original tree before purchasing young stock from it, and gathered all the information I could respecting it. Mr. Taylor and others informed me that the tree was found growing in the garden when Mr. Taylor took to it, and so far as I could discover, no one knew anything about its parentage. I was the more particular about making these inquiries, because Mr. Taylor had previously said he thought it was a seedling between Blenheim Orange and Normanton Wonder (the local name for Dumelow's Seedling). As most people are aware, Blenheim Orange is an Apple which comes fairly true from seed, and the probability is therefore against its being the parent of Newton Wonder. Anyway, I think we must be content to take this fine Apple upon its own merits, and its parentage must remain amongst the things unknown. *A. H. Pearson, Lowthorn, Notts.*

SMALL HOLDINGS.—In Mr. J. Lowrie's article on "Small Holdings" (January 19), it is stated that at the Continuation School Gardens at Banstead an acre of land has been actually made to produce more than £100 in a year. This reminds me that about seven years ago, when trade was bad, and means for supporting the unemployed were being discussed, I suggested that the corporation should cut up 50 acres of grass-land into 1-acre plots, and teach fifty families how, by hand-labour, to make each square yard of land yield sixpence in each 12 months. Many people laughed at so wild a fancy, and letters appeared in the papers showing that it was impossible. I felt sure, however, that it could be done, and am much pleased and interested to hear that the possibility has been proved. My calculation was, that allowing 640 yards in every acre for roads and waste, the 4200 remaining would yield £105. I reckoned that it could be done by the labour of one family comprising three adults, and I put the expense without including the labour, but allowing for a skilled teacher and superintendent, at £25 a year. Mr. Lowrie says the expenses at Banstead came to £40, including labour. I suppose, therefore, that my figure would be ample. Much must depend upon being near to a good market, and to the growing of sufficiently varied crops. A Moss-Rose bush occupying a square yard should yield

twenty buds. Two-pennyworth of Radishes, two good Lettuces, and one Cauliflower can be raised on the same space. Perhaps Mr. Lowrie will tell us whether at Banstead the crops are sold to wholesale dealers at wholesale prices, or taken to market and sold retail by the growers. *F. T. Mott, Birstal Hill, Leicester.*

CEREUS WITTII.—In Professor Schumann's interesting article in the *Gardeners' Chronicle*, January 19, p. 38, on this remarkable Cactus-form, he omits to call the reader's attention to the paper

from a small beginning now become quite established, and many look forward to the monthly parts, in their light blue covers, with pleasure, and find in them also profit. The Society has within the last year ventured on the important undertaking of publishing an *Iconographia Cactacearum*, of which two parts, with four coloured plates in each, have appeared. *Ed. Perceval Wright, M.D., Dublin.*

NAMING WHITE LÆLIA ANCEPS.—There being so much confusion of names amongst these types of *Lælias*, it would be a blessing if the Orchid Com-

L. a. Dawsoni; and one who knows Nottingham will say, if he sees you have a light-lipped one, "Hilli?" and so on. Then lately, another named *L. a. Leeana* has got into collections. I have had *L. a. Stella* sent to me as *L. a. Schroderiana*, the latter is now sold "true," being quite round owing to the petals and lip being so very broad. Again, I know a noted grower who sent a nice flower of the, at the present time, so called *L. a. Sanderiana* to the late Professor Reichenbach, and the professor named it *Schroderiana*; perhaps Mr. Sander could settle this latter point. I am penning these few notes hoping some experts may give their opinion as "the mair we crack, the better we'll ken." *Jas. Hamilton, Manderston, Duns.*

SOCIETIES.

ROYAL HORTICULTURAL.

JANUARY 20.—The second meeting of the Committee for the turn of the year, which was held on Tuesday last, in the usual Hall, proved to be little more extensive than that reported in these columns a fortnight ago. This caused little surprise, however, for the universal sorrow caused by the nation's bereavement has produced a feeling of depression, that naturally affects all gatherings for the time being.

A contributory cause of the smallness of the display might be found in the cold weather, for during the night of Monday there was some frost, and on Tuesday morning the wind was unusually cutting.

ORCHIDS were again the feature of the meeting, for in quantity and interest they bore more than their usual proportion to the rest of the exhibits. The Committee recommended the awards of one Botanical Certificate, and three Awards of Merit.

The FLORAL COMMITTEE gave their mark of distinction to one novelty only. This was a first-class hybrid *Rhododendron* shown by Messrs. JAS. VEITCH & SONS, who have raised so many fine greenhouse hybrids. It was named in compliment to our new King, Edward VII. There were several collections of hardy plants shown in flower, some of which had been forced, and others brought along slowly in frames. Messrs. H. CANNELL & SONS showed a pretty collection of "pyramidalis" Primulas, and Mr. BOX, of Croydon, had a group of varieties of the florists' type.

The FRUIT AND VEGETABLE COMMITTEE recommended four Awards of Merit to Apples, and in each case the variety so distinguished was one already in commerce, and pretty generally known. Messrs. H. CANNELL & SONS exhibited some capital Onions, and a collection of Apples.

The LECTURE in the afternoon was one by the Rev. Geo. Henslow upon "Some of the Plants Exhibited."

Floral Committee.

Present: W. Marshall, Esq., chairman; and Messrs. C. T. Drury, R. Dean, G. Reuthe, W. Howe, John Jennings, J. F. McLeod, C. J. Salter, R. B. Lowe, E. H. Jenkins, E. T. Cook, George Gordon, Chas. E. Shea, J. W. Barr, H. J. Cutbush, and George Paul.

Chinese Primroses were exhibited by Messrs. H. CANNELL & SONS, Swanley, Kent. This firm had a group of plants in flower under the name *Primula pyramidalis*, and the varieties shown represented crosses between the "Lady" types and the florists' varieties. Several of these were remarkable for the large size of the flowers, seeing that the single notched petal has been perfectly maintained. Such were Miss Irene, bright pink or rose colour, with yellow eye; Princess Eva, white, with yellow eye; Pink Lady, Red Lady, and Lady E. Dyke, white. Others were very pretty, but they were rather more closely approaching to the type of the florists' varieties, for the petals showed considerable fimbriation, though the characteristics of the "Lady" strain were noticeable in the foliage. Such was Mrs. H. Cannell, &c. The group altogether was very interesting, and the strain it represented is an exceedingly decorative one (Silver Banksian Medal).

Mr. JNO. R. BOX, West Wickham and Croydon, also showed some good Primulas, the plants being well cultivated specimens, and the varieties commendable; but the grouping of them might have been done to better effect. Some fine varieties were Giant White, Giant Pink, Queen Alexandra (white), Rosamond, very deep reddish-rose colour; Wickham Beauty (pink), Lady Randolph Churchill (lighter pink), The Queen, a much fimbriated flower (pink); White Perfection, Emperor (deep pink), also King of the Blues, and Wickham Blue. There were several varieties with double flowers, and of the star or stellate type (Silver Banksian Medal).

Mr. THOS. S. WARE, Ltd., Hale Farm Nurseries, Feltham, exhibited some hardy plants in flower in pots; these included



FIG. 33.—ROCK BORDER AT CHADDLEWOOD. (SEE P. 70.)

in the *Monatsschrift für Kakteenkunde*, in which Dr. Schumann gives a full account of this new species. This paper (*loc. cit.*, vol. x., p. 153), is accompanied by an excellent plate, in which not only the habit but the fruit and seed are well illustrated. The armature of sharp spines along the edges of the flattened, adhering stems probably did not come out very clearly in the photographs sent from Berlin, but they are very characteristic in the figures in the organ of the German Cactus Society. In referring to this little monthly journal, may I take the opportunity of recommending it to the attention of those readers fond of cultivating this group of plants. Edited by Dr. Schumann, it has

mittee of the Royal Horticultural Society would fix a date for exhibiting them at the next flowering season, the Committee having some experts present to name and correct those they thought named wrongly. All are agreed that those with dark-coloured lips are *L. a. Sanderiana*, but the liberties taken with the other types causes much confusion and annoyance. As it is now, we buy a plant not in flower as so-and-so, and when it flowers we find it the same as one we have under another name; this, I am sorry to say, is a too common occurrence. With regard to those with light-coloured lips and pure white lips, some growers have—say a holiday, his neighbour calls and says "I see you have

Primula floribunda and the pale sulphur-coloured variety, *Isabella*: some giant Snowdrops, as *Galanthus Elwesii robustus*, *G. byzantinus*, *Iris stylosa alba*, and *I. histrio*; *Primula obconica*, and *P. o. rosea*; *Cyclamen Atkinsii*, and *C. rubrum*. There were also plants of *Saxifraga longifolia*, *Gaultheria procumbens*, *Galax aphylla*, and *Scabiosa caucasica* (Silver Banksian Medal).

Messrs. BARR & SONS, King Street, Covent Garden, London, exhibited a fine lot of flowers of twenty-two varieties of *Helleborus*. The bold flowering Snowdrop *Galanthus Whittali* was also shown well, and there were Roman and Italian *Hyacinths* flowering in bowls containing pebbles and water.

Messrs. WALLACE & CO., Kilnfield Gardens, Colchester, showed *Iris Danfordi*, *Bakeri*, *Heldreichi*, and *reticulata Kregelii*.

Messrs. GEO. JACKSON & SONS, Woking, showing flowering bulbs in pots, including *Narcissus Golden Spur*, *Henry Irving*, *incomparabilis*, *Freesia refracta alba*, *Hyacinthus azureus Iris Sinjarensis*, *I. Bakeri*, *Cyclamen libanoticum*, &c.

A group of *Cyclamens* in bloom from F. D. LAMBERT, Esq., Moor Hall Gardens, Cockham, Beds (gr., Mr. J. Fulford), made a fine display of flowers. There were two dozen or more plants, some of them in 7-inch pots, and they were well flowered (Silver Banksian Medal).

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea, again exhibited a group of plants of the blue-flowered *Coleus thyrsoideus*, and flowers of about fifteen varieties of their greenhouse *Rhododendrons*.

Mr. J. RUSSELL, Richmond Nurseries, Surrey, exhibited some effectively coloured specimens of *Cupressus erecta lutea*.

The DIRECTOR of the Royal Gardens, Kew, sent a fine plant with two spikes of flowers of the *Phaius Warpuri*, Hort. (see fig. 31), collected by M. Warpur in Madagascar. Mr. R. A. Rolfe identifies this as the typical *P. tuberculosus* (see fig. 32), Blume, and therefore gives that name to it. The *P. tuberculosus*, Reich., f, Mr. Rolfe names as *P. simulans*. The chief difference seems to be that the old form in gardens previously is of a trailing habit, with certain spaces between the pseudo-bulbs; while the newer arrival, on the contrary, appears to be a terrestrial plant of a tufted habit. This difference might arise from local influence, such as the decay or destruction of the trees which formerly occupied the spot where the plants grew. The flowers are similar in shape and colour to those of *P. tuberculosus*, except that the labellum appears to be shorter, and not so expanded across the side lobes. Sepals and petals white; lip-base orange, with beautiful red-brown markings; callus purple at base, orange in front; front lobe of the lip whitish, tinged with rose-purple.

Capt. C. C. HURST, Burbage Grove, Hinckley, showed an interesting set of varieties of *Cypripedium* × *Adrastus*, *C. × Grovesianum* varieties, *C. × Lathamianum*, *C. × Deedmanianum*, &c.

REGINALD YOUNG, Esq., Liverpool (gr., Mr. Poyntz), showed flowers of *Laelio-Cattleya* × *Sunray*, *L.-O. × Diogenes*, and other hybrids of *Laelia cinnabarina*; also two *Cypripediums*.

Awards of Merit.

Calanthe × *Oakwood Ruby*, from NORMAN C. COOKSON, Esq. (gr., Mr. Wm. Murray). The finest-coloured hybrid *Calanthe* yet raised, the whole flower being of a rich ruby-red, except a small white spot on the labellum.

Odontoglossum nevadense rosefieldiense, from DE B. CRAWSHAY, Esq., Rosefield, Sevenoaks. Flowers larger than the ordinary form; sepals and petals chestnut-brown with yellow margins, and some yellow markings at the base; lip white with brown markings in the centre, and a yellow fringed margin.

Cattleya chocoensis alba (C. candida, Lehm.).—From Sir FREDERICK WIGAN, Bart. (gr., Mr. W. H. Young). Flowers pure white, having the well-known peculiarities of the type, viz., very broad petals, and the whole flower less expanded than most other large-flowered *Cattleyas*.

BOTANICAL CERTIFICATE.

Phaenopsis Dorali.—From Sir FREDERICK WIGAN, Bart. A singular little species with yellowish flowers closely barred with brown.

Fruit and Vegetable Committee.

Present.—Geo. Bunyard, Esq. (Chairman), and Messrs. H. Eslings, Jas. H. Veitch, W. Bates, S. Mortimer, Alex. Dean, Geo. Kelf, W. Pope, H. Markham, W. Poupart, E. Beckett,



FIG. 34.—APPLE CLAYGATE PEARMAIN.

(Recommended an Award of Merit by the Fruit Committee of the Royal Horticultural Society on Tuesday last.)



FIG. 35.—APPLE BRAEBANT BELLEFLEUR.

(Recommended an Award of Merit by the Fruit Committee of the Royal Horticultural Society on Tuesday last.)

Awards.

Rhododendron × *King Edward VII.*—This is another hybrid raised by Messrs. JAS. VEITCH & SONS, Chelsea, and is from a cross between *R. Teysmanni* ♂ and *R. Javanicum* ♀. It is a strong growing plant, with bold, somewhat larger leaves than have some of these hybrids. The flowers are 2 inches or more across, ten or a dozen produced in a truss, and the colour is rich chrome-yellow, whilst the anthers were bright red (Award of Merit).

Orchid Committee.

Present: Harry J. Veitch, Esq., in the Chair; and Messrs. Jas. O'Brien (Hon. Sec.), J. Gurney Fowler, de B. Crawshay, O. J. Lucas, R. Brooman-White, H. J. Chapman, F. Sander, H. A. Tracy, W. H. Young, E. Hill, W. Cobb, J. Colman, H. Ballantine, and J. Douglas.

The exhibits of Orchids again consisted chiefly of cut specimens, the cold wind rendering it hazardous to send plants any considerable distance.

Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen (gr., Mr. W. H. Young), showed an effective group, in which were fine plants of *Cattleya chocoensis* and *C. c. alba*, *Laelio-Cattleya* × *Hypatia*, and another pretty unnamed *Laelio-Cattleya*; and the yellow *Laelia* × *Mrs. M. Gratrix*. Arranged with them were good plants of *Odontoglossum* × *Harryanocrisum*, *Sophronitis grandiflora rosea*, *Zygo-colax* × *Wiganianus*, *Cypripedium* × *Godseffianum*, *C. insigne* *Harefield Hall var.*, *Aerides Vandorum*, *Phaius tuberculosus*, Reich., f., and cut spikes of many fine *Laelia anceps*, including *L. a. alba*, *L. a. Hilli*, *L. a. Sanderiana*, *L. a. Stella*, and some fine coloured forms; also *Phalaenopsis Schilleriana*, *P. grandiflora aurea*, *P. amabilis*, *Miltonia* × *Bleuana*, &c. (Silver Flora Medal).

WALTER COBB, Esq., (gr. Mr. J. Dulcote, Tunbridge Wells, Howes), showed *Cypripedium* × *Mary Beatrice* in fine condition. J. FORSTER ALCOCK, Esq., Northchurch, showed a fine form of *Cypripedium* × *Bingleyense* (*Harrisianum superbum* × *Charlesworthi*).

Mr. H. A. TRACY, Twickenham, showed *Lycaste* × *Ballie superbum* (*Skinneri* × *plana Measuresianum*), a very fine flower. ED. Q. QUINCEY, Esq., Oakwood, Chislehurst (gr., Mr. J. Lees), sent *Odontoglossum Londesboroughianum*. DE B. CRAWSHAY, Esq., Sevenoaks, showed *Odontoglossum* × *Hallio-crispum aureum*, *O. nevadense Rosefieldiense*, *O. Rossii* Raymond Crawshay, O. R. Lionel Crawshay, all very fine forms; and cut spikes of *Laelia anceps Schroderiana*, *L. a. Dawsoni*, original best form; *L. a. "Juno,"* very rich in colour; and spikes of two fine forms of *Odontoglossum crispum*.

A. W. H. HAY, Esq., Oakley Park, Eye (gr., Mr. H. Pratt), sent flowers of a nearly white form of *Dendrobium nobile*, with some resemblance in form to *D. Hildebrandi*.

J. LUMSDEN, Esq., Balmedie, Aberdeen (gr., Mr. Patterson), sent hybrid *Cypripediums*.

Messrs. HEATH & SON, Cheltenham, showed a group of Orchids in flower, composed of *Dendrobium* × *splendidissimum* *Leeanum*, *D. × Edithae*, *D. aureum*, *D. nobile*, hybrids of *D. Cassiope*, the fine *Cypripedium* × *Lathamianum giganteum*, varieties of *C. insigne*, &c.

Messrs. HUGH LOW & CO., Bush Hill Park, sent *Cypripedium* × *Prewettii*, and a fine nearly white *Cattleya Trianei*.

NORMAN C. COOKSON, Esq., Oakwood, Wylam (gr., Mr. Wm. Murray), sent spikes of *Calanthe* × *Phebe*, of a pleasing pink colour, and *C. × Oakwood Ruby*.

F. Q. Lane, Geo. Wythes, Geo. Woodward, A. H. Pearson, J. Willard, and W. Wilks.

Messrs. H. CANNELL & SONS, Swanley, made an exhibit of sixty dishes of Apples, inclusive of the best dessert as well as culinary varieties now in season. Some of the most prominent of these were Baumann's Red Reinette, Bismarck, Blue Pearmain, Peasgood's Nonsuch, Claygate Pearmain, Lane's Prince Albert, Cox's Orange Pippin, King of Tomkins County, Gascoigne's Scarlet Seedling, Cox's Pomona, Blenheim Orange Pippin, Loddington Seedling, Norfolk Beaufin, Chelmsford Wonder, Mère de Ménage, Blenheim Orange Annie Elizabeth, and Hoary Morning (Silver Knightian Medal).

Messrs. CANNELL also showed excellent Onions, inclusive of the varieties Reading Improved Flat, Cranston's Excelsior, Coconut, and the well known Ailsa Craig (Cultural Commendation).

Messrs. SUTTON & SONS, Reading, showed stalks of a variety of Rhubarb named Crimson Winter. The stalks were rather slender, a foot or so long, and coloured bright crimson for their whole length. The growths had apparently been made naturally in the open ground.

"The Sutton" Rhubarb, another variety altogether, and a valuable one, was shown splendidly by Mr. John Butler, gr. to the Earl of ANCASTER, Normanton Gardens, Stamford, and a Cultural Commendation was awarded in respect of this.

A similar mark of distinction was gained by Mr. Jno. Taylor, gr. to F. BIBBY, Esq., Hardwicke Grange, Shrewsbury, who showed good specimens of *Oliver de Serres* Pears.

Captain CASE, Beckford Hall, Tewkesbury, showed fruits of an Apple under the name Beckford Beauty, but the variety was determined to be Barnack Beauty.

Mr. C. ROSS, Welford Park Gardens, exhibited two new

Apples, crosses from Cornish Aromatic & Cox's Orange Pippin. These were named Bertha and Edgar respectively, but neither was given an award.

Some Yams (*Dioscorea Batatas*) were shown by Miss BRETON, Forest End, Sandhurst. They were fair specimens, and had been grown in common garden soil, in which they were planted last April, the roots being lifted in December (Vote of Thanks).

Awards.

Apple Beauty of Kent.—This is a very large, first-rate culinary Apple, in season from November until the end of February. The fruits are not only exceptionally large in size, but they are handsome, and in favoured localities assume a considerable amount of bright red colour, more or less in stripes, upon a greenish-yellow ground. The flesh is tender, almost soft, and very juicy. When thoroughly matured in a good situation, this Apple, which has been cultivated for three-parts of a century, is equal to table quality; but its size renders it more or less unfit for this purpose. Mr. Bunyard says that the variety does not succeed well on a cold or very damp soil. Mr. GEORGE WOODWARD, Barham Court Gardens, near Maidstone, showed some remarkable specimens, which were Culturally Commended, and they were gathered from trees which had not been "summer-pruned" during last season. Whether or not the quality of the fruits shown was due to this circumstance, we were informed by Mr. Woodward that the fruits were larger and better than others upon trees that had been pruned in the usual manner (Award of Merit).

Apple Brabant Bellefleur.—A culinary Apple of very good quality, in season from November until April. Fruits of large size, skin yellow, streaked with red, eye conspicuously open, segments large, and set in an angular, wide basin. The stalk is short, and this is also contained in a considerable cavity. The tree is a good grower, and a free cropper. (See illustration in *Gardeners' Chronicle*, February 21, 1874, p. 241, which we now reproduce, fig. 35). Fine fruits were shown by Mr. T. H. Slade, gr. to Lord POLTIMORE, Poltimore Park, Exeter (Award of Merit).

Apple Claygate Pearmain.—A description of this well-known high-class dessert Apple is scarcely necessary at this date, seeing that the variety was figured in the *Gardeners' Chronicle* so long ago as January 2, 1847; but we reproduce the illustration (fig. 34). It continues good until March at least, and the specimens shown by Mr. W. STRUGNELL, Rood Ashton Gardens, Trowbridge, were in excellent condition for table. The variety was discovered by John Braddick, Esq., growing in a hedge near his residence at Claygate, Surrey, and he exhibited fruits at a meeting of the Horticultural Society on Feb. 19, 1822; see above reference in *Gardeners' Chronicle* (Award of Merit).

Apple Reinette du Canada.—Mr. W. STRUGNELL also exhibited good specimens of this Apple, a first-class fruit for both table and kitchen use. The fruits are large, ribbed prominently towards apex, skin yellow, occasionally brownish on side next the sun, and dotted with brown russet. Eye large, segments short, set in deep and slightly angular basin. Stalk about half inch long, in a deep, wide cavity. The variety generally succeeds best in gardens as a dwarf tree upon the Paradise-stock, but in warm soils, as in Kent, the trees have succeeded as open standards (Award of Merit).

Obituary.

J. BAGULEY.—We regret to announce the death of J. Baguley, which took place on the morning of January 29, after a short but painful illness, in which pneumonia was the direct cause of death. The deceased was for some years foreman with Mr. Wm. Bull of Chelsea, and on leaving him, he went to Messrs. Charlesworth & Co., Heaton, Bradford, as traveller and foreman, in which capacity his extensive knowledge of Orchids, which form the specialty of the firm, as also of the trade and the persons engaged in it, rendered his services of great value. In a short time after he was engaged, we believe, Mr. Baguley was taken into the firm. Although a comparatively young man, Mr. Baguley had extensive knowledge of his business, and a quiet and careful way of doing business which inspired confidence in those with whom he had to do, and who will sincerely regret his loss.

Continued Increase in the Circulation of the "GARDENERS' CHRONICLE."

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, and ALL CLASSES OF GARDENERS and GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.



METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period January 20 to January 26, 1901. Height above sea-level 24 feet.

1901.		DIRECTION OF WIND.	TEMPERATURE OF THE AIR.					TEMPERATURE OF THE SOIL AT 9 A.M.					RAINFALL.	TEMPERATURE ON GRASS.			
JANUARY 20 TO JANUARY 26.	At 9 A.M.					Day.	Night.	At 1-foot deep.	At 2-feet deep.	At 4-feet deep.	Lowest Temperature.	Grass.					
	Dry Bulb.		Wet Bulb.	Highest.	Lowest.												
SUN. 20	W.S.W.	deg.	deg.	deg.	deg.	ins.	deg.	deg.	deg.	deg.	deg.	deg.	deg.				
MON. 21	S.S.W.	44°	64°	43°	45°	6	38	6	...	41°	44°	29°	45°	33°			
TUES 22	S.W.	48°	8	46°	8	52°	9	39°	0	...	42°	7	43°	2	45°	33°	
WED. 23	N.E.	48°	2	46°	0	50°	3	47	8	...	44°	4	43°	8	45°	45°	
THU. 24	S.S.E.	31°	6	31°	2	45°	0	30°	5	...	43°	7	44°	4	45°	52°	
FRI. 25	S.S.E.	42°	8	41°	8	47°	5	31°	0	0-05	42°	44°	1	45°	6	24	
SAT. 26	W.S.W.	40°	2	37°	0	47°	7	37	30°	10	42°	64°	0	45°	8	28	
	W.N.W.	39°	9	36°	5	52°	1	37°	6	0-01	41°	84°	0	45°	8	30°	
MEANS...		...	42°	3	40°	4	49°	4	37°	4	0-16	42°	7	43°	8	45°	30°

Remarks.—The weather has been very dull during the past week, and the latter part was remarkable for strong cold winds and frequent showers.

THE WEATHER IN WEST HERTS.

A WEEK of rough and stormy weather. Previous to the 28th ult., there had been eleven days of exceptionally high temperature, but since then unseasonably low readings have prevailed, and on the coldest night the exposed thermometer showed 8° of frost. At 1 foot deep the ground has become much colder, but at 2 feet deep the temperature is still about 2° warmer than is seasonable. Sharp showers of rain, snow, sleet, and soft hail, occurred during the week, but the total measurement amounted to less than half an inch. During the same period, about 3 gallons of rain-water has come through the turfed soil percolation gauge, and about 1 gallon through the bare soil gauge. The sun shone on an average for 2½ hours a day, which may be regarded as a good record for the time of year. The atmosphere has been on the whole drier than of late—indeed, somewhat dry for the season. The most noteworthy feature for the week, however, was the persistence of high winds. The 27th ult., taken as a whole, proved the windiest day, with one exception, that I have yet recorded here in any month. In fact, from six o'clock in the morning until midnight the force of the wind amounted to that of a gale, and for the twelve hours ending 9 P.M., the average velocity was 26 miles an hour. In the windiest hour the mean rate was 29 miles—direction west. I calculate that in the strongest gusts the velocity of the wind must have risen to at least a rate of 45 miles an hour. Crocus Sieberi was first in flower on the 27th ult.—which is a fortnight earlier than in 1899, and a month earlier than last year. On the 27th, I gathered the first Rose bloom of the year in the open ground—a small but clear and well-formed flower of the green Rose (*Rosa viridiflora*). This is the first time I ever remember seeing a Rose in flower in my garden at the end of January. *E. M., Berkhamsted, January 29, 1901.*

MARKETS.

COVENT GARDEN, JANUARY 31.

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Asparagus "Fern," bunch ... 1 0-2 0	Maidenhair Fern, per doz. bunches ... 4 0-8 0
Carnations, per doz. blooms ... 2 0-3 0	Marguerites, p. doz. bunches ... 2 0-4 0
Cattleyas, per dozen ... 9 0-12 0	Mignonette, per doz. bunches ... 4 0-6 0
Eucharis, per dozen ... 2 0-4 0	Odontoglossums, per dozen ... 6 0-9 0
Gardenias, per doz. ... 1 6-2 6	Roses, Tea, white, per dozen ... 1 0-3 0
Lilium Harrisii, per dozen blooms ... 4 0-6 0	— Safrano, per dozen ... 1 0-2 0
Lilium lancifolium album, per dozen blooms ... 1 6-8 0	— Catherine Mermet, per dozen ... 3 0-6 0
Lilium rubrum, doz. ... 8 0-5 0	— Smilax, per bunch ... 3 0-5 0
Lilium longiflorum, per dozen ... 4 0-6 0	Tuberose, per doz. blooms ... 0 4-0 6
Lily of Valley, per doz. bunches ... 6 0-12 0	

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantums, p. doz. ... 5 0-7 0	Ferns, small, per 100 ... 4 0-6 0
Arbor-vitæ, var. doz. ... 6 0-8 0	Ficus elastica, each ... 1 6-7 6
Aspidistras, p. doz. ... 18 0-36 0	Foliage plants, var., each ... 1 0-5 0
— specimen, each ... 5 0-10 6	Lily of Valley, each ... 1 9-3 0
Cannas, per dozen ... 18 0	Lycopodiums, per dozen ... 3 0-4 0
Crotons, per doz. ... 18 0-30 0	Marguerites, per dozen ... 8 0-12 0
Cyclamen, per doz. ... 8 0-10 0	Myrtles, per dozen ... 6 0-9 0
Dracenas, var., per dozen ... 12 0-30 0	Palms, various, ea. ... 1 0-15 0
— viridis, per doz. ... 9 0-18 0	— specimens, each ... 21 0-63 0
Ericas, var., per doz. ... 12 0-36 0	Pelargoniums, scarlet, per dozen ... 8 0-12 0
Econymus, various, per dozen ... 4 0-18 0	— Ivyleaf, per doz. ... 8 0-10 0
Evergreens, var., per dozen ... 4 0-18 0	Spiræas, per dozen ... 6 0-12 0
Ferns, in variety, per dozen ... 4 0-18 0	

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, English, per bushel—	Grapes, Almeira, doz. lb. ... 5 0-7 0
cookers, large ... 3 0-5 0	Lemons, case ... 6 6-8 6
various ... 2 0-4 6	Lyches, new, pkt. ... 1 0
Blenheims, bush. ... 4 0-6 0	Oranges, Navel ... 16 0 19 6
— Nova Scotia, per barrel ... 10 0 18 0	— Blood ... 8 6
— Californian, box ... 8 0-9 0	— Murcia, case ... 6 6
Bananas, bunch ... 5 0-9 0	— Tangerine, box ... 6 0-1 0
— loose, per doz. ... 1 0-1 6	— Jaffa, case ... 10 0
Cobnuts, lb. ... 0 4	— Valencia ... 12 6 16 0
Cranberries, case ... 12 6	Pears, Californian
— quart ... 0 6	Winter Nelis, per case ... 4 0
— Russian kegs ... 2 0	— stewing, crates ... 9 0
Chestnuts, per bag ... 3 0-10 0	— Californian Easter Beurre, half case ... 11 0
— Italian, ... 18 0	Pines, each ... 1 6-3 0
Grapes, Alicante, per lb. ... 0 10-1 0	Sapucaia nuts, lb. ... 1 3
— Colmar, A. ... 1 6-2 0	Strawberries, per lb. ... 4 0-8 0
— Colmar, B. per lb. ... 0 10-1 6	Walnuts, cwt. ... 38 0

VEGETABLES.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Artichokes, Globe, per doz ... 6 6	Hors radish, foreign, per bunch ... 0 9-1 0
— Jerusalem, sieve ... 0 9-1 0	— loose, per doz. ... 1 9
— Stachys or Chinese, per lb. ... 0 4½	Leks, per dozen bunches ... 1 6
Asparagus Spruce ... 0 7-0 8	— etrus, French
— Paris Green, bun. ... 6 0	Cabbage, doz. ... 1 0-1 3
— home grown, bun. ... 4 0	Mint, per doz. bunches, new ... 4 0
Beans, dwarf, Madeira, per bkt. ... 3 0	Mushrooms, houses, per lb. ... 0 9-0 10
— Ch. Islds. and home, dwarf, new, per lb. ... 1 6	Onions, picklers, per sieve ... 2 0-8 0
Barb de Capucine ... 0 4	— per bag ... 3 0-4 6
Betroot, bushel ... 1 8-1 6	— cases ... 8 6-9 0
Beet, per dozen ... 0 6	— English, p.cwt. bag ... 5 0
Broccoli Sprouts, bushel ... 1 0-1 3	Parsley, 12 bunches ... 1 0-2 0
Brussel Sprouts, per sieve ... 1 0-1 6	— per sieve ... 0 9-1 0
Cabbage, tally ... 1 6-2 0	Parsnips, cwt. bags ... 2 0-2 6
— dozen ... 0 6	Potatoes, per ton ... 75 0 120 0
Carrots, 12 bunches ... 1 9-2 0	— New, per cwt. ... 12 0-14 0
— washed, in cwt. bags ... 2 0-2 6	— New French, lb. ... 0 4
Cauliflowers, per dozen ... 1 3-2 0	Radishes, per 12 bunches ... 1 0-1 6
— crate ... 0 10-0	Rhubarb, Yorks, doz. ... 10½-1 1½
— tally ... 6 0-10 0	Salsal, small, punnets, per dozen ... 1 8
— Italian, basket ... 6 0	Savoy, per doz. ... 0 6-1 0
Celeriac, per dozen ... 2 6	— per tally ... 2 6-3 6
Celery, doz. bndls. ... 10 0-15 0	Scotch Kale, bush. ... 1 0
— unwashed, doz. ... 8 0-10 0	Seakale, doz. punnets ... 12 0-15 0
Chicory, per lb. ... 0 3	Snailshells, new, lb. ... 0 2
Cress, doz. punnets ... 1 6	Spinach, per bushel ... 2 0-3 0
Cucumbers, doz. ... 13 0-18 0	— French, crates ... 3 6-4 0
Endive, new French, per dozen ... 1 6	Salsaf, bunch ... 0 4
Garlic, new, lb. ... 0 2	tomatoes, Canary deeps ... 2 0-3 0
Horseradish, Eng. lb., bundle ... 1 6-2 0	Turnips, per dozen ... 1 6-2 0
	— in bags ... 1 6-2 0
	Turnip tops, bush. ... 1 0
	Watercress, p. doz. bunches ... 0 6-0 8

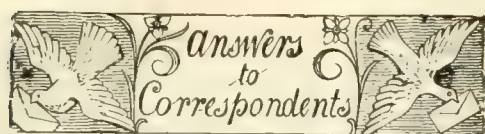
REMARKS.—In consequence of the funeral of her late Majesty, the markets of Covent Garden will be closed on Saturday, and Friday will be the market day instead. The supplies of fruits and vegetables are plentiful all round, and prices rule low.

POTATOS.

Various sorts, 80s. to 100s. per ton; foreign bags, 50 kilo., 4s. to 5s.; Dunbar Maincrop, 120s. to 125s.; Up-to-Date, 120s. John Bath, 32 & 34, Wellington Street, Covent Garden.

SEEDS.

LONDON: January 30.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that there were but few buyers on to day's seed market, with not much business doing. Inferior qualities of English Cloverseed are quoted at lower rates, whilst German prices also come easier. There is no change this week in either Alsike, White, Trefoil, or Timothy seeds. As regards French and perennial Ryegrasses the tendency is upwards. Meantime more attention is being given to spring and winter Tares. For Turkish Canaryseed to come forward, 1s. per quarter more money is asked. Hempseed, however, remains dull and neglected; full prices, meanwhile, are demanded for Mustard and Rapeseed. The cold weather naturally hardens values for Blue Peas and Haricot Beans.



A CORRECTION: DUBLIN MUSEUM. In my brief report of Professor Johnson's lecture on "Parasitic Flowering Plants," I have unintentionally misrepresented him when stating that grazing is the only remedy by which continental cultivators can grapple with the Dodder. This should have been the semi-parasitic Eyebright (Yellow Rattle), belonging to the genus *Rhinanthus*. A. O'Neill.

A KIND OF SOIL WHICH WILL CAUSE A PLANT TO SPORT: X. Y. There is no known formula for mixing soils that will, with certainty, bring about sporting in flowering plants. Excessive quantities of manure, or the extreme poverty of the soil may cause it.

ANNUALS, BIENNIALS, AND PERENNIALS, TREATED AS SUCH, FOR FLOWERING IN THE MONTH OF JULY: J. C. Asters of all kinds, if sown in heat at the end of March; *Ageratum* in variety; dwarf *Antirrhums*, if sown in heat in March; *Argemone grandiflora*, sown in mild warmth in March; *Asperula azurea setosa* and *A. odorata*, sown out-of-doors in April; *Calendulas*, as Meteor, Orange King, Sulphur Crown, and pluvialis—sown out-of-doors in April; *Coreopsis Drummondii*, *coronata*, and *tinctoria*, sown outside in April; *Centaurea*, or Sweet Sultan, in several colours, sown in April; *C. cyanus minor* (Cornflower), sown in April out-of-doors; *Centranthus macrospilon*—sown in April; *Clarkia integrifolia*, *C. elegans*, and *C. e. rosea*, *C. pulchella*, and *C. p.* double-flowered varieties; *Collinsias bicolor*, *candidissima*, and *grandiflora*, *Convolvulus minor*, all of which may be sown out-of-doors. *Dianthus sinensis*, in double and single-flowered varieties, sown in heat in March early, flower the first season; *Francoa*, if sown in March, under glass; *Godetias*, sown in April out-of-doors; *Leptosiphon* in variety, sown in the open in March; *Lavatera trimestris*, red and white; *Linum grandiflorum coccineum*, sown in April out-of-doors; *Mignone* in variety, Tom Thumb varieties of *Nasturtium*, sown in poor soil in April; *Nicotiana affinis* and *N. sylvestris*, sown in heat in March and transplanted; *Phlox Drummondii*, sown thinly in pots in this month and March on a gentle hotbed, and planted out in May.

ASPLENIUM BULBIFERUM: Denmark. Moore, in his *Index Filicum*, has a var. *gracile*; thus, *Asplenium bulbiferum* var. *gracile*.

BINDING THE "GARDENERS' CHRONICLE": Inquisitive. The price varies according to style of binding. If bound strongly in half-calf and marbled boards, with label and gilt lettering on the back, 4s. or 5s. per half-yearly volume would be charged. Cloth is cheaper.

BOOKS: The Orchid Review. X. Y. Z. One copy for the year 1901, post free, 7s.; two copies, 13s. 6d.; back volumes 6s. 9d. each.—*H. W. Onions for Profit.* By T. Greiner, and published by Walter Burpee & Co., Philadelphia, Pa., U.S.A.

BLOOD, PERUVIAN GUANO AND CLAY'S MANURES: Inquisitive. Dried blood is not very soluble in the soil, that is, it decays slowly. It is a source of concentrated nitrogen yielding ammonia and nitric acid by decay. Peruvian guano is more rapid in its action, and needs to be used with caution; 4 oz. per square yard, or 72 oz. per cubic yard of soil, at one time. Clay's should be used according to the instructions accompanying the packages. We do not advise manures to be employed in the soil unless you know the constituents of soil and manure. Pot the *Chrysanthemums* in partially decayed turfy loam, leaf-mould, or decayed dung, and apply the manures named as top-dressings at such times as they are most needed by the plants. To do more than this is to favour over strong, sappy growth, which is not productive of fine blooms or early maturity.

CACTUS EPIPHYLLUM: W. G. K. Grafting may be performed from now onwards till July; the earlier the better. Both stocks and scions should be got on the move at this season previously to grafting, and the grafted plants afforded warmth of 55° to 70°. Usually *Pereskia aculeata* is used

as a stock, but really any of the cylindrical or corrugated Cactus will answer as well.

CARICA PAPAYA: B. G. S. This species, a native of tropical South America, with the habit and general appearance of a Palm, having a tuft of foliage at the top of the stem, may be grown in a stove under ordinary treatment. It attains a height of 12 to 14 feet when grown in a tub, but given a border it will reach 20 feet. The plant is mostly monoecious—that is, the female and male flowers are found on different trees, but occasionally on the same. The plant has brought fruit to great perfection in this country, and the seeds have yielded an abundant stock of young plants. The plant being tropical, should be freely exposed to the sun, and not shaded, as is usual with flowering stove plants. Brown, in his *National History of Jamaica*, tells us that "it has (the fruit) a pleasant, sweetish taste, and is much liked by many people, and that while young it is commonly used for sauce; and when boiled and mixed with lime-juice and sugar is not unlike, or much inferior to, that made of real Apples, for which it is commonly substituted." The juice of the unripe fruit and the seeds had a reputation at one time as a vermifuge.

CORRESPONDENCE CLASSES: East Berks. We will communicate your complaint to the proper person.

DOVECOT AND YEW: Doubtful. The dung will not be injured by the Yew-tree; on the contrary, the tree is likely to be injured by the dung taken out of the dovecot.

DWELLER IN A LODGE: M. A. B. The employer could turn you out at the expiration of the one month's notice, even although you may not have obtained another cottage; but we do not suppose that he would be so hard-hearted.

EXCRESCENCES ON THE ROOTS OF CUCUMBERS: F. R., Sussex. Usually due to infestation by eelworms, and not to fungus, like the club-root of Brassicas. The fresh soil from the arable field, if mixed with decayed manure, will doubtless suit the Cucumber plants. Push a number of Carrots into the bed-soil; they form good traps for various insects that harbour in the upper crust of the soil.

INSECTS FOUND IN VINERIES: W. H. The specimens sent are those of the clay-coloured weevil, *Otioryncus picipes*. This species is partial, in the grub state, to the roots of the Grape-vine and Raspberry, and in the mature state to the buds, flowers, and young shoots. When ravaging the Vines above the ground-level, they may be caught in large numbers when feeding at night in large sheets of canvas, &c., spread under the Vines, the gardener going into the vinery and suddenly turning on a bright light from a dark lantern, and giving the canes a smart tap, when the weevils at once drop on to the sheets. These should forthwith be gathered up, and taken out of the vinery, and the trapped weevils collected rapidly and destroyed. If this operation be followed up for a few weeks, a clearance will soon be made of the pests. The larvae in the soil may be turned up with a digging-fork, and sought for, or fowls may be penned on the border, the surface-soil being meanwhile often turned up and stirred about. They are chiefly to be found in the soil about 4 inches deep. It is the habit of the weevil to hide beneath clods, stones, &c., and in crevices of the walls, and numbers of them may be killed by dashing boiling water under these, and on the surface of the walls where no vegetation is found. The black weevil, *O. sulcatus*, and *O. tenebriosus*, the red-legged weevil, do much harm to the roots of Vines. Currants, Gooseberries, Strawberries, &c., may be similarly dealt with.

KAINITE AS A TOP-DRESSING FOR ASPARAGUS BEDS: Rosarian. 4 oz. per square yard is a sufficient quantity at one time.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—J. E. 1, *Sedum carneum variegatum*; 2, *Sempervivum tortuosum variegatum*; 3, *Aloe socotrana*.—*H. G.* *Lælia crispilabia*; rather smaller than the original form.—*W. H. E.* 1, *Veronica Traversii*; 2, *Lonicera fragrantissima*; 3, *Chimonanthus fragrans*; Ferns, next week.

PARADISE APPLE: H. W. This variety is *Pyrus præcox* of botanists, a native of Russia, free and surface rooting, and therefore useful as a stock for the Apple when growing on cold, clayey, or other unsuitable soils, or in pots. The stocks can be purchased of some of the nurserymen.

RHUBARB: Leainei. Dig up the roots and place them in a house, pit, cellar, hole in the ground, or any place having a temperature of 55°, covering the roots with some light soil, the tops with straw or mats, or exclude the light by other means. Afford water once or twice to make the soil sufficiently moist to favour growth. When grown in pits out-of-doors, a mild bottom heat is afforded, hoops or rods are bent over the roots, and mats and stable-litter used to cover these, and keep the place warm and dark.

ROSES IN BLOOM ON ST. GEORGE'S DAY: Rosarian. Any kind of Tea, Hybrid Tea, or Hybrid Perpetual, if suitably potted and established for one year, can be obtained in bloom on that day by slight forcing.

SEEDS: C. B. We are not able to name the plants from the seeds only. 1 is a species of *Anona*, the fruits of which are edible; 2 looks like a water-plant; 3 and 4, certainly leguminous plants; 5 is a *Bignoniaceous* plant. If sown on a hotbed they would probably germinate.

SEEDS FROM INDIA: Pavo. Judging from your list, the seeds would be more acceptable in a botanical garden than to you. We should hesitate to consider any plant as "rubbish," though some are suitable for one purpose, others for a different use. *Acer oblongum* might be worth growing; *Juniperus recurva* is certainly desirable, as also are *Myricaria germanica*, *Actea spicata*, *Cornus macrophylla*, and *Primula Stuarti* var. We do not know all the species you mention. If they are Indian they would be described in Hooker's *Flora of British India*. We should advise you to offer them to the Royal Gardens, Kew, where some at least would probably be acceptable.

SITUATION ON A TEA OR SUGAR ESTATE: Scotchman. Advertise in the Indian and West Indian newspapers, or make application to some of the large importing houses.

STRAWBERRY ABUNDANCE: Denmark. Messrs. Laxton inform us that they do not grow any Strawberry under this name. The name does not occur in the catalogues of Messrs. Elwanger & Barry, of Rochester, N.Y., nor in those of Vilmorin, Andrieux & Co., or Transon Frères, nor is it mentioned in Dr. Hogg's *Fruit Manual*.

TRESCO ABBEY: a Correction. By an unfortunate blunder, for which Mr. Wyndham Fitzherbert is in nowise responsible, Tresco was stated to be on St. Mary's Isle. It is in reality on Tresco Island.

VINES: Isabel H. Savory. The soil, doubtless, is not of a suitable kind; see what was said in a recent issue of the *Gardeners' Chronicle* about making a Vine-border, and follow the instructions there given. Do not add manure to the soil, or at the least in very small quantities only; manure is better applied in the form of a top-dressing or as liquid. Cut the Vines back this month either to the height of the wall-plate or to the ground level. If you find on examination the whole of the soil is got into a close, pasty condition, re-make the border with better materials, adding large quantities of sand, lime-rubble, charcoal, and $\frac{3}{4}$ -inch bones, if the new soil is adhesive. If it be now more than 2½ feet in depth, reduce it by adding to the drainage materials, and cover these with sods, the grassy side being turned downwards.

COMMUNICATIONS RECEIVED.—B.S., the Academy of Natural Sciences of Philadelphia U.S.A.—H. J. Jones—A. C. F.—G. H.—A. W.—J. C. S.—S. P.—L. G. Flenelle—Justus Cordery—A. W.—D. T. F.—T. W. S.—Laxton Bros.—C. C. H.—W. J. B.—Ed. André—Charlesworth & Co.—A. B.—G. D., Prague—W. L. B.—C. M. A.—A. H.—J. O. B.—Capt. C. G. H.—F. A. Prices Patent Candle Co.—Aspirant—V. F., Capetown—A. K.—G. W., shortly—J. B.—J. K. A.—F. W. Smith—R. P. B.—T. Ryan—J. B.—R. I. L.—J. C. S.—Prof. Hans Schütz, Zurich.—W. N. C., Mass. (photograph not received)—Laxton Brothers.—A. W.—East Berks—W. Siehe Mersina.—A. E. S.—J. W. S.—J. B., Llandudno.—A. C. F.—Hortensia.—S. W. F.—Field & Lowe, Cape Town.—G. Dittich, Prague.—F. W. S.—W. W.—W. H. E.—E. M. C.—W. G. M.—T. R.—Bure.—J. H.



THE

Gardeners' Chronicle

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NOTES FROM A GARDEN AT NICE.

ENGLISH gardeners may be interested in the following notes made in a market-garden in the neighbourhood of Nice:—

Very beautifully situated is this garden, from both the artistic and horticultural points of view, about three miles from the town of Nice on the eastern slope of the fertile valley of the Var. Both sides of the valley slope gently down to the wide, rocky bed of this, the most formidable of all the Alpine torrents, which in dry weather is only represented by little wandering streams among the stones. There is beauty here, and sharp contrast between the Olive-clad slopes of the valley, with its fertile gardens and the snowy peaks of the Alpes Maritimes towering up to the right and away behind, many of the lower crags crowned with little villages, appearing at this distance most insecure and inaccessible. The garden is about four acres in extent, and is laid out in wide terraces, the soil being the rich deep red loam found in this district of Caucade.

This terracing, and the labour it represents, is perhaps the first thing which strikes the stranger in this district. An English writer who has given us a charming book on the Alpes Maritimes, says "These terraces are simply an instance of the truth of the Scottish proverb that "Mony a mickle maks a muckle."

Had they all been constructed in the same half-century, the rental of the province would indeed have been insufficient to pay for them,

but the peasants, working at them all day and often part of the night, have covered Provence with a network of stones. In this way they have preserved to her a soil that is ever ready to run off.

Many of the little plots rise at an angle of 70°, or even 75°, and but for these walls might cease to exist after a thunderstorm." The garden of which I write is, however, on a gentle slope, no walls are necessary, and the bank at the bottom of each terrace forms an excellent bed for early Strawberries. Although it is only a few days past the New Year, these are in full blossom, with fruit already beginning to colour; and by placing light wooden uprights along the bed and covering with lights, or even with mats, should be ready for market in a very short time—always provided that the weather remains kind, for even in the sunny South of France it plays strange pranks sometimes.

This system of light, portable shelters is universal in gardens here, and is well worth the attention of English gardeners, who often scorn all protection short of substantially constructed greenhouses or frames, and seldom or never bring the "mountain to Mahomet," or the greenhouse to the plants, as is done here. As carried out here, it is simple, effective, and very inexpensive, and might be adopted with great advantage during our treacherous English spring, when so often we see the results of many weeks' care all undone by a sharp late frost.

Stout uprights are driven into the ground 4 feet to 6 feet apart, or even more, strips of wood or light iron rods are laid upon, and the mats, or "paillassons" as they are called here, are laid on, rolled up every morning, and let down at sunset or in bad weather; or, for forcing purposes, lights are laid on and the sides protected with mats or roughly boarded. For convenience sake, most things are grown in beds a little narrower than the mats, and this plan is adopted with bulbs, Carnations, Roses, Anemones, salads, &c., with the greatest success. Not only are earlier flowers secured, but they are gathered in good condition and undamaged by weather. We have also several hundred feet of light glass structures, about 4 feet 6 inches in centre, filled principally with Carnations, which are simply planted transversely in double rows. The plants are covered with blossoms, and will continue to flower vigorously until April.

Carnations are seldom layered here; market-growers obtain all their stock from cuttings, which are taken now in large quantities, and inserted very roughly in frames, and kept close until struck. Many good varieties are grown, but one rarely sees a flower without a split calyx. The continual propagation by means of cuttings may be one of the causes for this, another being possibly the enormous number of flowers the plants are allowed to carry.

A large part of the garden is devoted to Roses, all dwarfs, on their own roots; and here again the best results are obtained at this time of the year, when a little shelter is given. We have been cutting freely from the following varieties:—Paul Neyron, Paul Nabonnand, Marie Van Houtte, Souvenir de la Malmaison, General Schablikine, Comtesse de Leusse, La France, Maréchal Niel, Safrano. The latter is also known as Rose de Nice, and is a true Provence Rose, and almost indigenous in this district where it practically grows wild; a beautiful thing when fully blown, creamy, and semi-

double, with exquisite coppery foliage. It is of little value in the local markets, and is always cut in bud. Oranges are perhaps our most important fruit-crop, excepting Grapes. The Mandarin varieties are the most profitable; all varieties are grafted on the wild or bitter Orange. The Vines are worthy of an article to themselves. For wine-making almost all the Vines are a variety of the American species, Vitis labruska, considered here to be phylloxera-proof. It is commonly known as Framboise, from the musky flavour of the Grapes. This variety is more lightly pruned than others, which have all the laterals cut back to two eyes. Our Peach-trees promise well, and display an abundance of ripe young wood covered with plump buds.

Amongst the peasantry here, horticulture can hardly be said to be very advanced, in spite of the profusion of flowers and fruit; everywhere much of the work is very roughly done, the climate and soil being so favourable that skilful gardening is scarcely necessary.

The methods of tillage appear most laborious to English eyes. Digging is done not with a spade, but with a tool called here a "sape," rather like a short, very heavy hoe, set at an acute angle to the handle, or the same tool with prongs like a fork. The workman stands on the ground which has been dug, and using his tool like a pick-axe, drags the soil over towards him. Deep cultivation does not appear to be general, but I have seen land broken up about 2½ spits deep, and the natives are apparently experts in the use of what is certainly a very clumsy tool. M. M. R.

NEW OR NOTEWORTHY PLANTS.

ARCHONTOPHOENIX CUNNINGHAMI AND A. VEITCHI.

AMONGST Palms with pinnate leaves, the two above-named are of the finest; they both grow quickly, so that they may soon be seen in fine condition. I have seen two large specimens about 18 to 20 m. high in the famous Palm collection at Herrenhausen, near Hanover, which is under the directorship of our best Palm-grower, my old friend, Mr. Wendland. Both specimens were flowering abundantly last December. The flower of A. Cunninghami, better known as Seaforthia elegans, is a flesh-coloured, much branched inflorescence; whilst that of A. Veitchi is not so much branched, but with thinner branches of a somewhat violet tinge. The young plant of A. Veitchi is of the most elegant shape, resembling somewhat a Grisebachia Forsteriana, but the leaf-stalks are in youth covered by a loose brownish tomentum, which afterwards disappears. The pinnules of the leaves are linear, very long, acuminate, in part almost caudate, as the apex runs out into a fine point about an inch long, and hardly half a millimetre broad. Through the pinnules run three nerves, of which the midrib is prominent, both on the upper and under surface, and covered on the under surface with some brown, more or less dense, hairs. The lateral nerves are prominent only on the under surface. The pinnules at the end of the younger leaves are broader, and have more nerves; the pinnules are almost, but not exactly opposite, each pair about an inch distant from the next. A young leaf with a stalk and rachis, measuring together 28 inches, has an almost vertical stalk about 16 inches long and about 3/16-inch thick. The main rachis curves in an angle of nearly 90°, and the pinnules, directed a little forward, spread horizontally, hanging down only at the outermost apex. The leaf has a long sheath about 10 inches long. The pinnules are not all of the same breadth, some are a little more, others a little less, than half an inch, whilst

the length is from 8 to 11 inches; there are eleven pairs of pinnules. Compared with *A. Cunninghamii*, the pinnules of *A. Veitchii* are smaller, and there are fewer pinnules on each leaf of equal age, and these stand somewhat further apart. *Dr. U. Dammer*.

CALANTHE × OAKWOOD RUBY.

The history of this hybrid is interesting, and is as follows:—Many years since *Calanthe* × *Veitchii* (Oakwood variety raised at Oakwood) was fertilised with *C. cristata rubro-oculata*, and among the progeny was *C. × Alexandræ* (F. C. C., R. H. S.). This was again fertilised with *C. V. rubro-oculata*, producing among other seedlings a plant which on flowering showed much colour. By selecting the highest coloured flowers as parents for five generations, *C. × Oakwood Ruby* was evolved. It is worth noting that the original *C. rubro-oculata* has a white flower with a deep portwine-coloured eye, whereas in *Oakwood Ruby* the colouring is reversed, viz., the whole flower being deep portwine coloured, the eye alone being white. The failing of the plant is want of vigour. This, Mr. Murray and I hope to remedy, by using its pollen on to a high-coloured, but at the same time extra robust mother. *N.C.C., Oakwood, Wylam*.

THE ARIZONA FIR.*

We are indebted to Mr. Henkel, of Darmstadt, for specimens of the bark and foliage of this remarkable tree. The bark is of a thick corky texture and of a creamy-white colour. The linear, oblong, notched leaves are silvery-white on both surfaces; stomata occur also on both faces of the leaves. The resin canals are placed in the centre of the leaf-tissue (parenchymatous). We have not seen the cones, but from the description they must be like those of *Abies lasiocarpa*, Nuttall, to which some years since we referred the *A. subalpina* of Engelmann, and the *A. bifolia* of Murray.†

We have not seen Dr. Merriam's original description, but we may cite what is said in the *Botanical Gazette* (Chicago), November, 1896:—

"Dr. C. Hart Merriam has described (*Proc. Biol. Soc., Washington*, 10, 115–118, 1896), a new *Abies* from Arizona. It is from the San Francisco mountain region, and is remarkable for the colour and character of its bark, being one of the most conspicuous trees on the mountain between the altitudes of 8,950 and 9,500 feet. It was even found at an altitude of 11,000 ft. by Mr. Purpus when collecting in Arizona. The substance of the technical description is as follows:—

"*Abies arizonica*.—About 15 m. high; bark a highly elastic, fine-grained cork, whitish or greyish (usually creamy-white), with irregularly sinuous greyish ridges; leaves of cone-bearing branches thick, sub-triangular in section, sharp-pointed at the apex, about 2 cm. long; leaves of lower branches much longer, flatter, blunt, and notched at the apex, 2.5 to 3 cm. long; cones dark purple, slender, medium, or rather small; scales much broader than long, strongly convex laterally, purple on both sides; bract (without awn) reaching to or past middle of the scale, its body much broader than long."

Prof. Sargent places little reliance on the presence of corky bark as a diagnostic character, pointing out that it occurs on other trees in the same region, and is therefore probably of climatal origin.

"Corky bark is particularly noticeable on trees on the San Francisco peaks of Arizona, where a similar peculiarity characterises the bark of *Abies concolor* and of *Pseudotsuga mucronata* (Douglasii). Upon the strength of the spongy bark of the Arizona trees, and of some peculiarity in the form of their cone-scales, Dr. Merriam established his *Abies arizonica*. I have seen bark equally corky, however, on *Abies lasiocarpa* in Colorado and Eastern Oregon, and in Southern Alberta and

British Colombia, and also the scales of cones produced by trees on the Blue Mountains of Oregon, which in shape cannot be distinguished from those which grow on the San Francisco peaks." *Sargent, Silva*, xii., 113.

Be this as it may, it is clear from Mr. Henkel's specimens that the tree is very distinct for cultural purposes. Its whitish, Birch-like, corky bark and silvery foliage, the colour of which, according to Mr. Henkel, surpasses that of *Picea pungens argentea*, render it very attractive. The tree, as has been said, grows on the mountains of Arizona at a height of from 7,250 to 11,000 feet, where it is exposed to great cold, and will therefore presumably be hardy in this country. Mr. Henkel calls it *Abies arizonica* var. *argentea*. *M. T. M.*

DENDROBIUM ASHWORTHIE.

As a means of enabling those who are interested to form some idea of the general appearance of this fine plant (fig. 36), it will be useful to say that the desired end may be obtained for garden purposes by likening it to an albino of *Dendrobium atroviolaceum*, well illustrated in the *Gardeners' Chronicle*,

small indistinct purple lines at the base. When mature, the whole flower changes to cream-white, the small purple marks at the base of the lip not being visible, unless the side lobes are put aside. In gardens it will take its place with *D. atroviolaceum*, *D. Johnsoniæ*, *D. spectabile*, and *D. Madonnæ*, with which it was imported. *James O'Brien*.

CYNORCHIS PURPURASCENS.

In the *Gard. Chron.* for November 10, p. 335, this plant is referred to as "a very remarkable and decidedly attractive Orchid." The description given is very accurate, and it only needs the accompanying illustration (fig. 37, p. 87) to give one an idea of the flowers, and the way they are borne on the stem. Although called "*purpurascens*," Mr. Rolfe, I believe, has some doubts as to whether the plant here figured being that species, first described under the name of "*Cynorchis*," by De Petit Thouars. If not, it is probably a new one; and judging by its behaviour under cultivation is likely to supersede, or at least dim the brilliancy of *C. grandiflora* and *C. Lowiana*, the other two species in cultivation. The flowers are

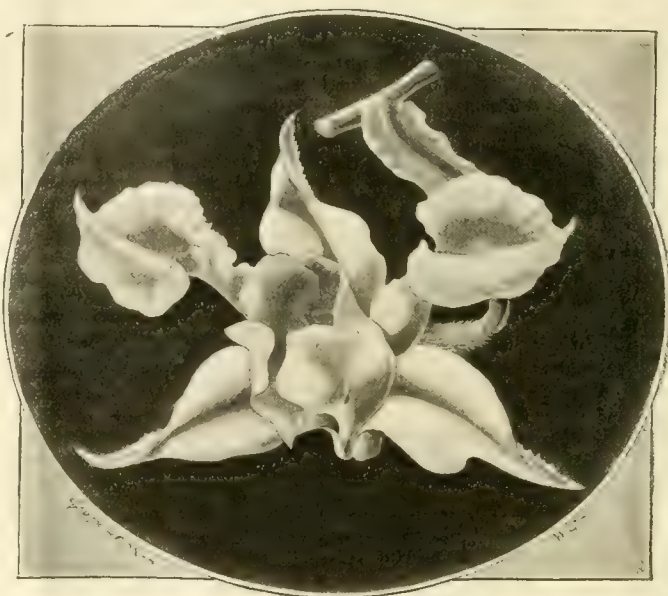


FIG. 36.—DENDROBIUM ASHWORTHIE: FLOWERS CREAMY-WHITE.

January 27, 1894, p. 119, though structurally it is nearest to *D. macrophyllum* (Veitchianum). *Dendrobium Ashworthie* was imported in 1898 by Messrs. F. Sander & Co., through their collector Micholitz, and the marked plants passed into the collection of Elijah Ashworth, Esq., Harefield Hall, Wilmslow, Cheshire, who flowered it this year, and was awarded a First-class Certificate for it at the meeting of the Royal Horticultural Society on January 15. Of it Mr. Ashworth says: "The plant seems to be a strong grower, and will, I think, have two or more spikes on a bulb. Some of the imported bulbs were 18 to 20 inches in height, and 4½ inches in circumference at the upper and thickest part."

D. Ashworthie has clavate pseudo-bulbs, slender at the base, tapering upwards, and bearing two to four broad, dark green leaves; inflorescence erect, bearing eight or more flowers, each furnished with a large bract at the base; ovary hairy, sepals lanceolate, acuminate, slightly keeled, and with the keel serrate towards the margin; in colour at first greenish-white, changing when mature to cream-white; petals ovate, apiculate, rolled back on the lower half so as to appear stalked, pure white; lip three-lobed, the side-lobes and basal portion of the front lobe erected, the apex continued to a point, cream-white, with some

of a fair size, and of a bright rosy-mauve or lilac colour, with a conspicuous oval white blotch in the centre of the four-lobed lip. From nine to twelve, or more, blossoms are produced on a scape, each with a purplish pedicel at the base of which is a whitish boat-shaped bract. The leaves on the cultivated plants are of about the size shown in the background of the figure; but Mr. Warpur, who has introduced the plant, says that in Madagascar they are often as much as 2 feet long, and 4 to 6 inches broad at the widest part. The small drawings to the right represent in a much enlarged state (1) the column showing the remarkably slender, bristle-like caudicles of the pollen-masses, each ending in a little knob. The pipe-like figure represents one pollen-mass.

This species grows wild in Madagascar, in the same localities as *Impatiens grandiflora* (Hensel). It is a deciduous epiphyte, and is nearly always found growing in the roots of a *Polypodium*, attached to the branches of plants of *Pandanus candelabrum*. These plants flourish on the banks of rivers and streams, where the atmosphere is usually very humid. Although the leaves wither after the flower-spikes have vanished, Mr. Warpur says that this *Cynorchis* is never in a state of repose. The fleshy pseudo-bulbs or rhizomes, somewhat thicker than the little finger, and of a dull

* *Abies lasiocarpa* Nuttall var. *arizonica*, Lemmon = *A. arizonica*, Merriam. See *Botanical Gazette* (Chicago), November, 1896; *Gardeners' Chronicle*, January 11, 1897, p. 35; *Sargent, Silva*, xii., p. 113 (1898); *Abies arizonica* Merriam, var. *argentea*, *Hort. Henkel*.

† Masters, in *Gardeners' Chronicle* v. (1880), p. 172; and *Journal of Botany*, xxvii., 129.

FIG. 37.—*CYNORCHIS PURPURASCENS*. (SEE P. 86.)

Brownish or yellow colour, immediately begin to throw out new growths, so that at no period should the plants be dried off. The plant has been found to grow freely in this country in an intermediate-house, potted in a mixture of rough peat and sphagnum-moss, and it will also flourish on a block

of wood. The plant should be grown in shaded places until the large and remarkable leaves are almost fully developed, when a little more light may be afforded, and not much water, to bring about good spikes of flower. The plant was exhibited at the Drill Hall on December 4, 1900. *John Weathers, Isleworth.*

ORCHID NOTES AND GLEANINGS.

LELIA ANCEPS ALBA AND *PHALÆNOPSIS* AT TRING PARK.

CONSIDERING the number of fine white-flowered forms of *Laelia anceps* with only slight colouring on the front lobe, and more or less distinct purple lines on the base of the lip, it is strange that no rival as a true albino should have appeared to match with this charming pure white form, which was originally described in the *Gard. Chron.*, April 9, 1887, p. 485. The petals and lip are broad, and the whole flower very good in shape, exhibiting no colour in any part of its clear white flower, except the yellow keel running down the centre of the lip.

A good example of it is the central figure in a pretty group of varieties of *Laelia anceps* in the collection of Lord Rothschild, Tring Park, Tring (gr., Mr. E. Hill). Among others arranged with it being the white *L. anceps Schroderiana* (fig. 39), *L. a. Stella*, *L. a. Sanderiana*, and *L. a. Veitchiana*, the last named being another of the earlier introductions which has not yet had its identity confused by any later introduction, the bluish colouring on the lip rendering it very distinct. Some fine coloured varieties are also arranged with them, and assist in making the group highly effective. This show may be considered a second batch, for the earlier flowers even at Tring, as in places nearer London, were destroyed by the fogs.

The *Phalænopsis* are still in fine condition, and the *Odontoglossums* showing well. *Laelia superbiens* flowers at Tring regularly, and one large specimen has two stout spikes over 10 feet in length; beside it, and sending up a spike, is a smaller plant, which, from the appearance of the growth, and its flowering in a small state, as shown by the imported bulbs, was thought to be of hybrid origin. It will soon be proved.

Some interesting hybrids are developing, and houses of white *Cyclamen*, scarlet *Pelargonium*, and other flowers appear. One house is filled with *Begonia Gloire de Lorraine*, large baskets of it being also suspended. There is scarcely anything but the charming pink flowers to be seen. They have been flowering for months, and seem likely to last months longer.

CYPRIPEDIUM × *ALLANIANUM*.

A two-flowered inflorescence of this hybrid of *C. Spicerianum* and *C. Curtisii* is kindly sent by W. M. Appleton, Esq., Tyn-y-Coed, Weston-super-Mare. The flowers are fairly intermediate in character between the two parents, although the dorsal sepal more nearly approaches that of *C. Spicerianum*, and the lip that of *C. Curtisii*. The dorsal sepal folds back on each side at the base, and is white, tinged with purple, more especially at the back. The flower has a yellowish-green base, from which a broad central band of purple ascends, and some shorter and less distinct lines are found on each side. The petals are broad, and have hairs on the margins; the tint is a greenish-yellow and purple-brown, with minute purple-brown spots. The labellum is yellowish-green underneath, and light purplish-brown on the face. The staminode, which is an attractive feature, is formed much like that of *C. Spicerianum*, and is in colour a bright lilac-purple, with an orange-coloured mark in the centre. In *C. × Sir Redvers Buller*, Mr. Appleton showed one of the best new *Cypripediums* of last year, and other fine *Cypripediums* have flowered with him for the first time. The *Cypripediums* are favourites with him, perhaps because he has so much success with them. *J. O'B.*

CYPRIPEDIUM × *SAVAGEANUM*, PITT'S VARIETY.

In the *Gardeners' Chronicle*, October 13, 1888, under the above name, I recorded the first of the crosses between *C. Spicerianum* and *C. Harrisianum*, which flowered in the collection of Mr. Kimball, Rochester, U.S.A., and was named after his gardener, Mr. Savage. The crosses made with

practically the same parentage in other places proved very variable, and consequently nearly a score of different names have been given to them, among others being "Pitcherianum," "Osbornei," and "Spicero-Harrisii." As the best form, C. × Pitcherianum, "Williams' variety," has a high reputation, and of it Mr. H. T. Pitt, of Roslyn, Stamford Hill (gr., Mr. Thurgood), some years ago, obtained a specimen. For a time it produced flowers of the well-known large, dark-coloured type; but later it gave a remarkable sport of the nature of an albino, in which the purple and reddish-brown tints of the normal form are almost entirely suppressed, and the ground colours of the flower (chiefly yellow, green, and white) are asserted even in a more marked degree than that shown in Baron Schroder's plant mentioned in the *Gardeners' Chronicle*, January 26, p. 54. Indications of the same tendency has been before noted in other hybrids, and the constancy of sports (subject to occasional reversion) proved. Probably in the course of time many cases of the kind will occur among other sections of hybrids, and another interesting field of study in vegetable physiology introduced.

C. Savageanum, Pitt's variety, by its remarkable change of colour, would scarcely be recognised by one who knows the original form well, and at the same time it is very beautiful. The flat dorsal sepal is $2\frac{1}{2}$ inches wide, and the same in height; the basal half-inch emerald-green, with a few short green rays, the remainder pure white with a band of purple up the centre. The reverse side shows the colour of the face, but toned down. Lower sepal whitish, with green lines. Petals 5 inches from tip to tip, 1 inch wide, honey-yellow, with faint green veining, and still fainter small purplish dots on the base, a band of pale bronze-green running up the centre. Lip honey-yellow, tinged on the face with pale rose-purple. J. O'B.

THE RAINFALL OF 1900.

It is generally acknowledged that the rainfall for the year 1900 was somewhat deficient, or but little above the average, and that the springs of water have suffered accordingly.

The following table shows the rainfall for the past year at Rothamsted, Hertfordshire, according to the measurements taken at a rain-gauge which in size is 6 feet by 7 feet 3 inches, equal to one-thousandth of an acre area. It stands 2 feet above the ground, and is 420 feet above the sea-level. The average rainfall from the same gauge is also given for forty years, with the difference of 1900 above or below the average.

Rainfall at Rothamsted for each Month of the Year 1900, and the Total Yearly Rainfall.

Months.	1900.		
	Rainfall, 1900.	Average Rainfall of Forty Years.	Above or below the Average.*
	Inches.	Inches.	Inches.
January	3.67	2.45	+1.22
February	4.91	1.74	+3.17
March	0.96	1.73	-0.77
April	1.33	1.97	-0.64
May	1.08	2.33	-1.25
June	2.63	2.41	+0.22
July	1.13	2.73	-1.60
August	3.93	2.60	+1.33
September	0.84	2.55	-1.71
October	2.60	3.19	-0.59
November	2.61	2.77	-0.16
December	3.65	2.17	+1.48
Yearly total	29.34	23.64	+5.70

The above data show that the yearly total of rain for 1900 was about 29 $\frac{1}{4}$ inches; this is slightly under three-quarters of an inch in excess of the average of forty years. There were five months which registered an excess of rain, namely, January,

February, June, August, and December, while the remaining seven months each recorded a deficiency.

What is most remarkable in the weather record of the past year at Rothamsted was the large proportion of gloomy and sunless days. In fact, out of the 365 days of the year, there were but fifty-seven days on which there was no water to measure; very frequently, of course, it was but heavy deposits of dew, or slight falls of snow. The chief reason, however, for the comparatively small total yearly rainfall is the fact that there were no heavy downpours. The gloominess of the year is further shown by the small quantity of bright sunshine which has been registered. In the year, 1610 hours were recorded, against 1803 hours in the previous year. April and July were the only months in which an excess of sunshine was recorded; the other ten months all gave a deficiency, the first three months being especially dull.

It is of interest to note the effect of the rainfall on the springs of water. An unused well at the Rothamsted laboratory is measured month by month to gauge the rise or fall of the water. In consequence of the comparative dryness of the years 1897, 1898, and 1899, the well during the month of October, 1899 had become perfectly dry. In November the water had risen 1 inch; in December it measured 9 inches; in January, 1900, it rose to 1 foot 7 $\frac{1}{2}$ inches; in February, to 4 feet 6 inches; in March, to 6 feet 3 $\frac{1}{2}$ inches, and in April to 6 feet 4 $\frac{1}{2}$ inches. From this date the water has been gradually sinking, month by month, so that in December just past, the depth of water was but 2 feet 7 inches. Owing to the large amount of rainfall in December, there probably will be no further decrease. J. J. Willis, Harpenden.

HEDGES.

QUICKSET hedges in this part of the country are much neglected, both by landlords and by the tenant-farmers, and to this fact we are indebted for the beauty of our Hawthorn blossom, the hedges being allowed to grow for many years without being trimmed. When they are trimmed, they are not all cut evenly, but in humps and bumps. The tool invariably used may be described as something akin to a reaping-hook fixed into a handle of about 6 feet long (a switch). This implement is just as often used by striking downwards as upwards, unlike the Scotch hedge-cutter; and one never sees the English labourer look backwards to ascertain if the ridge of the hedge is left decently even. But clever though the Scotch are in switching up their hedges, using the knife with one hand only, the other is probably stuck into the pocket if the day be cold, or behind the back. But there is one department of English hedge-cutting of which the Scotsman appears to be totally ignorant, that is, in the masterly cutting, pleaching (laying over), and finishing up, by the clearing out of the ditch, the stout quickset fence "let to grow," such as is generally known in fox-hunting parlance as a "bulfinch." For this kind of work, there are in England men who may be called specialists. A hedge cut by these men is much admired. A huntsman or a bullock might dare to jump over it, but it would be impossible for either to go through it.

Whilst in Scotland, a year or two ago, I saw hedges which in my early days there were scrupulously switched up every year, and the bottom of the hedges cleared of weeds; but under the continuous switching system the hedges sickened, and were when I saw them so far gone in consumption as to be almost "past praying for." The gaps were made good with what in Scotland they call "stabs and rafters." When an Englishman finds his hedge going like these, he lets the plants grow for three or four years, then has them cut and pleached. This treatment, as I have said above, does not seem to be understood in Scotland. Can it be accounted for, that when a Scot comes to England, and acquaints himself with the advantage of this system, that, finding himself so very comfortable under the

altered circumstances, he never cares or troubles to "go back," and show them how some things may be done in a superior manner.

Beech (*Fagus sylvatica*) makes a very pretty and excellent fence for enclosing a wood or running by a public path, if it have the usual bank and ditch, like a Quickset-hedge. When such a hedge has grown, say, about 3 feet high, the tops of the plants should be tied systematically together; in this state they should be left for two or three years, when the upright growths are again tied, and this treatment is repeated until the hedge has grown to the desired height. Although no barbed wire is to be found in this fence, yet a huntsman, whilst negotiating it, must either jump clean over it or find the nearest gate. Beech has been a favourite garden fence from ancient times.

The Yew (*Taxus baccata*) is better adapted for a garden hedge than for planting round fields. It can be kept within reasonable bounds by yearly trimming, and being close and evergreen, it affords shelter and warmth in the winter, besides seeming to furnish the garden at that season. Complaints are made that it is a plant of slow growth, but if it be planted on reasonably good ground, this is not so. My experience is, that it grows quickly to a comfortable height for a man to clip it from the ground-level. When this happens not to be the case, the best thing to do with it is to cut it hard back, and again begin the neatly-cut small hedge as before. The cutting back had better be done late in the spring, as severe frost has an injurious effect on the plants when suddenly laid bare.

As a shrub, the Yew is not grown nearly so much as it should be. What other shrub is hardier, affords denser shelter, or a warmer and more comfortable appearance than the Yew? Being often found associated with churchyards, it is by some looked upon as a funereal subject only. This was done merely to provide material for bows in a by-gone age, when they fought in quite as manly a manner as they are doing in these days. The Yew, under certain circumstances, is said to be poisonous, but no one has yet been able to trace easily when it is in that poisonous condition. Some say that there is danger only when the shoots are eaten in a half-dry state. [That is so. Ed.] We do know that Yew is often browsed upon by cattle with impunity when it is found growing within the circuit of their pasturage, and we also know that children often eat their red fleshy berries without doing them harm; but the case might be altered were the kernels in them broken before they were so swallowed. W. Miller.

(To be continued.)

SUCCULENTS.*

No plants have undergone more modification of structure to adapt them to the climatal conditions under which they live, than have those known as succulent plants. They grow chiefly in countries where the climate is dry and arid, and where often rain is not known to fall during six or seven months in the year.

Such habitats are found in Mexico and South Africa, which countries may be said to be the headquarters of these plants. Growing on hot, sandy plains, or in rocky and gravelly situations, often fully exposed to the influence of a burning sun, it must be evident to anyone how necessary it is that they should have some means of storing up within themselves a supply of moisture to keep them alive during the long dry seasons which they undergo. Nature has met this requirement by providing them with a special tissue for the storage of water and other substances. It is this which gives them their succulent character. Sometimes it is in the leaves, as in Crassulaceae and the Aloes; or it may be in the stem, as in Cactaceae and the succulent Euphorbias. There are also many arrangements for preventing excessive transpiration of the reserve moisture. The leaves, when present, are closely packed on the stem, overlapping and

* The sign (—) signifies below the average, and the sign (+) above the average.

* A paper read before the Kew Mutual Improvement Society, by Mr. W. Brown.

shading each other; the intercellular spaces are much reduced, the epidermis has a thick cuticle, and the stomata, which are few in number, are sunk at the base of small depressions, being thus protected from dry winds. In some cases the

Their cell-walls become much silicified, and when the cells are dead they form a very effective protection to the tissue below. The sparkling character of the Ice-plant is due to similar cells on the leaves.

this, we must not go to the other extreme, and keep them dry when they are needing water for necessary growth.

CULTIVATION.

If properly attended to in this respect, the successful cultivation of succulents is comparatively easy. They require a great deal of sunlight, and so the houses should be constructed to admit as much as possible. The potting is best done in March, a light sandy loam forming the basis of the soil. Some genera require a richer soil than others, many are benefited by the addition of a little lime-rubbish and broken bricks. The peculiar conditions will be mentioned later in connection with the particular genera. Over potting must be avoided, and great care taken to have the pots thoroughly well drained. After potting, the houses may be kept rather close, and the atmosphere moist, although the plants will require very little water at the roots until growth has commenced. A light syringing during fine afternoons helps them to start. In summer, when in active growth, they should be watered as ordinary plants. As autumn advances, the water should be gradually withheld, and the houses most freely ventilated, with the object of getting the tissues of the plants well developed, to enable them to withstand the dull days of winter. Just sufficient water to prevent shrivelling will then be required. A night temperature of 45° F., will suit the majority of succulents during winter.

Some can withstand frost with impunity if kept dry, being in some cases subject to a temperature far below zero in their native homes. They are not, however, suited to outdoor culture, owing to the dampness of our winters. A few of the more hardy of the Cacti are *Opuntia arborescens*, *O. polyacantha*, *O. fragilis*, *Mammillaria vivipara*, *M. Nuttalli*, *M. chlorantha*, and *Echinocactus Simpsoni*. When these are grown outside, the position should be dry and well drained, and some covering given in winter to throw off superfluous water.

The decorative value of such succulent plants as *Agaves*, *Sempervivums*, &c., for outdoor work in summer is well known, at least when used as dot or marginal plants. But how seldom do we see beds composed altogether of succulent plants, although such a bed, well arranged, has a most pleasing effect, and forms a nice contrast to every other style of bedding. To return indoors, however, we find nothing better adapted for window culture or for the decoration of rooms. They are also well suited for forming rockeries under glass, as is well seen in the Mexican House at Kew. When treated in this way the plants show to much better advantage, and grow better than when in pots. *W. Brown.*

(To be continued.)

VILMORIN'S HYBRID ABIES.

ARTIFICIALLY raised hybrid conifers are few in number. One of the best known (fig. 38) and best authenticated specimens is that raised by the late Henry de Vilmorin at Verrières, between *Abies Pinsapo* and *Abies cephalonica*. From this tree, cones have been obligingly sent us by Mr. Philippe de Vilmorin, thus fulfilling the wish of his late father, for the specimens were, as we learn, labelled as if intended to be forwarded to us. The subject of hybrid Conifers is to be dealt with at the Scientific Committee on Tuesday next, by Dr. Masters.

HYBRIDISATION IN AMARYLLIDEE.

(Continued from p. 72.)

ANOTHER plant of tantalising parentage is *Amaryllis kewensis*. When I first saw this plant at Kew, some dozen years or so back, it was labelled "Amaryllis hybrid, Arbuckle's var." Later on it got down to "Amaryllis belladonna, Arbuckle."

At one time, as far as I could gather from

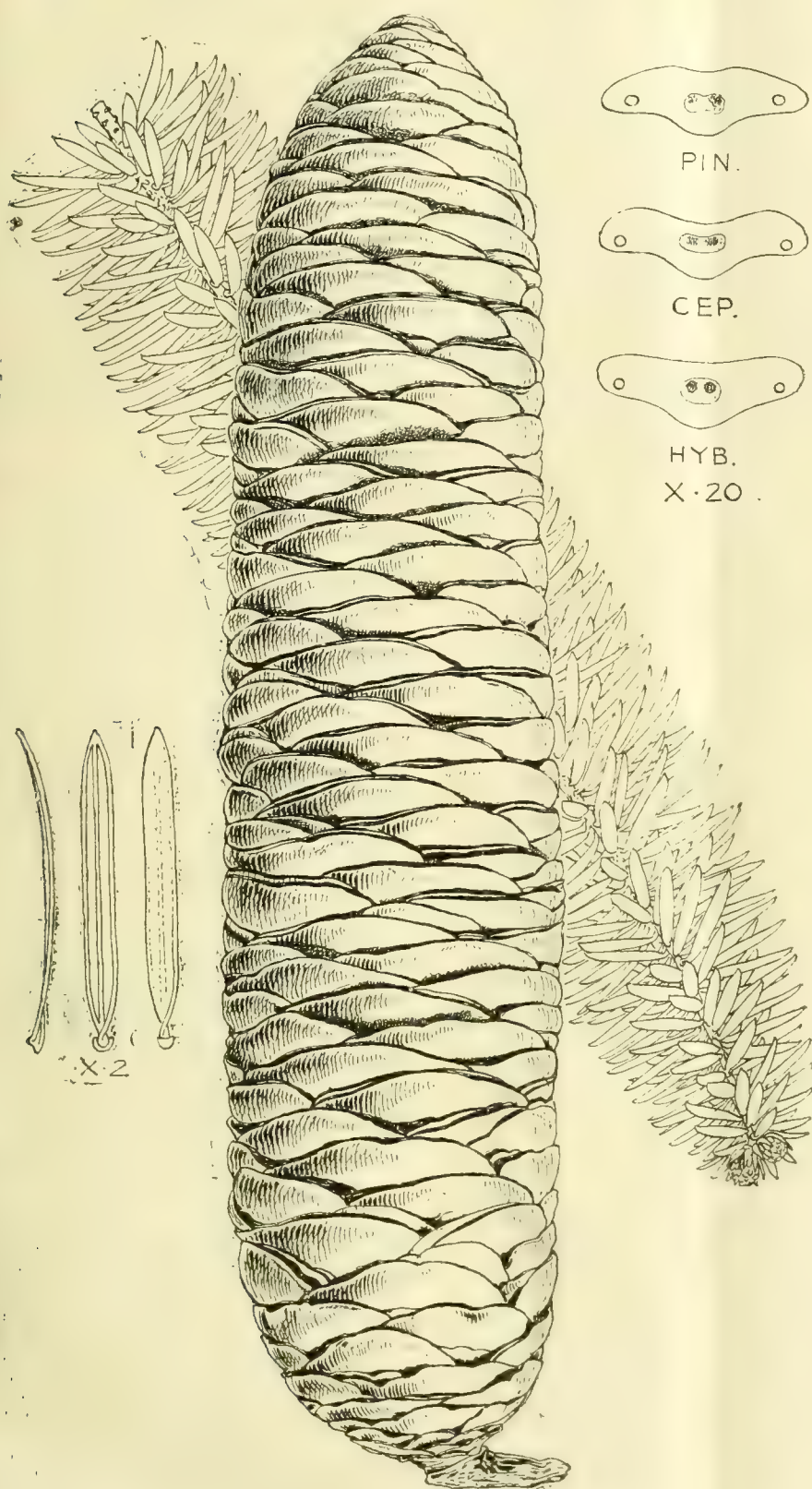


FIG. 38.—VILMORIN'S HYBRID ABIES.

(Leaves magnified 2 diameters, leaf-sections magnified 20 diameters.)

leaves secrete a waxy substance over their surface, e.g., the *Aloes*; others, of which *Crassula falcata* is an example, have a special covering formed by individual cells of the epidermis becoming enlarged and projecting like little knobs beyond the others, and meeting each other over the whole surface.

A study of these characters shows how everything tends to reduce transpiration, and bearing that in mind, it is easily understood how important is the proper regulation of the water-supply in the cultivation of succulents. In fact, none suffer more from over-watering; but whilst guarding again

various sources, it had come to the Royal Gardens as an unflowered supposed hybrid between *Brunsvigia Josephinae* and *Amaryllis belladonna*. Its supposed parentage did not carry it through the critical examination to which it was subject on flowering. But still, there it was—a live thing that was not *Amaryllis belladonna*, and yet could claim no ascertained parentage.

And so it got called *A. kewensis*. And certainly, as a commemorative name, its splendid inflorescence, unmatched among the *Amaryllids* for fragrance and beauty, entitled it to be associated with the Royal Gardens.

Yet I am of opinion that had this plant been claimed as an ascertained hybrid of *Brunsvigia* and *Amaryllis* by some authority, such claims could not have been overlooked; for it shares in many respects the characters of both suggested parents. Among the five kinds of *Brunsvigia* and *Amaryllis* in my garden, all bear seeds freely.

In the *Gardeners' Chronicle* of Nov. 10, 1900, mention is made of an alleged hybrid between *Vallota* and *Amaryllis*, raised by Mr. Rix of Truro, having cerise flowers. He states that he has never known *Vallota* produce seed unless artificially impregnated. This is not my experience, although it is certainly a bad seed bearer in some districts. At Terrington, in N. Yorkshire, where I cultivated *Vallota*, it seeded freely every autumn without any artificial impregnation.

Mr. Rix himself says that, "The only noticeable difference is the thicker necks of the bulbs, and the variation in colour"—that is from the female parent. It would appear that in Mr. Rix's seedlings, 89 per cent. came true, 2 per cent. were anemic, and 9 per cent. showed colour variety. This is not much beyond the allowed 5 per cent. of variation in true species. I would also remark that cerise coloured *Vallotas* were recorded many years ago, and constitute a well ascertained, but inconstant, colour variety. I have an old plate marked "225, J. Andrews" (believed to be from the *Floral Magazine*), of this variety.

Among *Vallota* and *Cyrtanthus* I have only heard of one hybrid, raised by crossing *Gastromema sanguineum* and *Vallota*. This interesting plant is nearly equi-poised between its parents, but has not the showy points of either. It is named *C. hybridus*, and was raised apparently in 1885, and first described by Mr. N. E. Brown, but I have never seen any statement as to who raised it, or which was the female parent.

I have on several occasions repeated the cross both ways, but without raising seed except on one occasion; in fact, I can never get *sanguineum* to carry seed of any sort, and of recent years, from some cause (probably smoke), *Vallota* has refused to thrive in the London neighbourhood.

Among *Nerines* some twelve hybrids have been raised dating from Herbert's time. He himself raised seven: *curvifolia* × *undulata* gave *Mitchamia* and *versicolor*, *curvifolia* × *flexuosa* gave *Haylocki*, *sarniensis* × *undulata* gave *Spofforthiae*, *flexuosa* × *undulata*, and × *humilis*; *humilis* × *undulata*, and *curvifolia* × *sarniensis*, all gave unnamed hybrids.

Mr. Baker also tells us (*Handbook of Amaryllideæ*, p. 103) that within recent years the following hybrids have been raised by Messrs. O'Brien, Leichtlin, Cam, and others:—*pudica* × *humilis* gave *amabilis*; *flexuosa* × *sarniensis* gave *elegans*; *sarniensis* × *curvifolia* gave *Meadowbanki*; *flexuosa* × *curvifolia* gave *Manselli* (said to be hardy); *undulata* × *flexuosa* gave *roseo-crispa*. I have the two latter.

Some of these show a great advance on the parents, but a really critical examination by an expert would, I feel sure, reduce this list. I think that the facility with which the species of *Nerine* hybridise is due to the same causes which have admitted of a similar state of things among the *Narcissi*.

Personally I do not claim much knowledge of this genus, and should be interested in learning whether all the alleged species of *Nerine* come true from seed?

Between *Clivia* and *Imantophyllum* one hybrid has been raised. *I. cyrtanthiflorum* (*Flore des Serres*, t. 1877), *I. miniata* × *C. nobilis*.

In *Hæmanthus* I can only find one admitted hybrid, *Clarkei*, raised by Colonel Trevor Clarke by crossing *coccineus* and *albiflos*, but I have heard of several recently raised but not yet distributed, such as *H. King Albert* (*Katherina* × *punicus*). Among the six species I cultivate *Katherina*, *Kalbreyri*, and *punicus* bear seed freely.

Among the genera which have produced no hybrids whatever, I find the following carry seeds freely (besides those I have incidentally mentioned above):—*Pancratium canariense*, *illyricum*, and *maritimum*; *Lycoris cyrtanthiflora* (sp. nova), *Acis autumnalis*. The following plant I have frequently tested, but without ever raising seed: *Lycoris squauigera*. The following hybrids are said to have been recently raised, but have not yet flowered:—*Crinum giganteum* × *longifolium* (Elwes); *C. scabrum* × *erubescens* (Elwes); *Vallota* × *Amaryllis* (Kew); *Brunsvigia* × *Amaryllis* (Kew).

SYNOPSIS OF RESULTS.

Number of admitted (specific or generic) hybrids of ascertained parentage:—

1 <i>Hippeastrum</i>	...	...	4
2 <i>Hymenocallis</i>	}	...	3
3 <i>Elsena</i>		...	
4 <i>Eucharis</i>		...	
5 <i>Urceolina</i>	}	...	2
6 <i>Crinum</i>		...	
7 <i>Vallota</i>	}	...	3
8 <i>Cyrtanthus</i>		...	
9 <i>Nerine</i>	...	...	12
10 <i>Hæmanthus</i>	...	...	1
11 <i>Clivia</i>	...	...	2

Total in 11 genera ... 27 hybrids.

36 genera produced no hybrids.

47 genera dealt with above.

These results have been reached by a process of elimination. They do not claim to give the total number of hybrids raised in these genera, but only the ascertained hybrids of undoubted parentage.

As for those which have appeared from time to time in gardens by some fortuitous process, by some forgotten labours, or as the purely natural result of grouping together in one house the various members of one genus, these may be many or few, but it is beyond the reach of human forces to tabulate them in any way. A. Worsley.

(To be continued.)

THE WEEK'S WORK.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. I. MEASURES, Esq., Cambridge Lodge, Flodden Road, Camberwell.

Platyclinis (*Dendrochilum*) *glumaceum*.—No more fragrant plant than this easily-grown variety exists, and it is always liked; besides, the plant is very attractive when in flower. The best place for it is the *Phalaenopsis*-house, placed on the stage on an inverted pot. It will succeed in a shady position in an ordinary plant-stove. This species is now producing new growths, and more moisture may be applied at the root, but this should be very carefully performed till the growths get well away from the base, when the leaf unfolds and the flower-scape becomes visible, water may be applied freely. Place the plants well up to the light in order to obtain sturdy growth at a later period. As the flower-spikes develop, support them with a thin stick, and thus enable the flowers to be seen to advantage. Re-potting, if necessary, should be carried out as soon as the pseudo-bulbs begin to form. The proper sort of compost consists of turfy peat and sphagnum-moss in equal proportions, and a very thin layer of compost is necessary, it being pressed sufficiently firm to keep the plants

in the desired position. The pots should be clean ones, and filled almost to the rim with clean crocks. Thrips and red-spider are its worst foes, but an occasional fumigation and a careful sponging of the leaves will keep these pests in check.

Dendrobium.—Many deciduous species have the flower-buds well advanced, and it will be advisable to bring the plants into growth by easy stages, but not immediately placing them in the warmest house, as to do this would be apt to cause side-growths instead of flowers to develop. The plants, as soon as the flower-buds are observed to be separating from each other, may receive more moisture and warmth. Any deciduous *Dendrobes*, either species or hybrids, that have ceased to flower may be repotted as soon as fresh roots begin to be made, care being taken not to afford pans or baskets unnecessarily large, erring rather in the other direction. Plenty of crocks should be used, the plants requiring water abundantly during active growth. The other materials should consist of chopped-up sphagnum-moss two parts, brown, turfy peat one part, and a considerable quantity of coarse, clean sand. Let the compost be compacted in moderation about the base of the plants with a pointed stick, not with the fingers, the latter causing souring of the materials ultimately. The potting being finished, they must be secured to neat sticks till the roots ramify the compost. Apply tepid rain-water, and syringe the plants lightly once or twice a day in fine weather.

Propagation of Dendrobes.—This is readily effected by cutting off some of the back bulbs which have not flowered very freely, cutting them into lengths having two or three buds each, placing these in pans of live sphagnum-moss and a small quantity of sand, and suspending the pans in a humid part of the East Indian-house or in a propagating-pit. Another method is to lay the severed pseudo-bulbs on a bed of sphagnum-moss or coconut-fibre refuse, placing a hand-light or small frame over them; new growths will start in a short time from the buds which have not flowered. These buds, when a few inches long, push forth roots at their bases, and may then be detached and potted in the usual manner in a compost of sphagnum-moss, chopped finely, and sand. Place them in a very warm, moist house, and shade from direct sunshine until established, when they will require but little shade.

THE HARDY FRUIT GARDEN.

By C. HERRIN.

The protection of Fig-trees.—Unless severe frosts occur, these may remain uncovered, but protective materials should be got in readiness, that they may be quickly applied if required. Thatched hurdles are useful for the purpose, and if the top branches of the trees be unfastened and tied carefully together at the base, no difficulty will be experienced in covering them.

Grafting.—Cut shoots from the trees for use as scions, and lay them in the soil to the depth of several inches, near a north wall or other cool, moist situation. Cuttings of Gooseberries and Currants should be similarly treated until they can be prepared for planting in the position selected for them.

Peaches and Nectarines.—The unfastening of the branches, with a view to the retarding of the blossoming period, is practised in many gardens. The warmth from sun-heat will be greater close to the wall as the season advances, and if the work is to be done at all, it should be commenced forthwith. Owing to the uncertainty of our springs, however, the retarding of the blooming period for a few days or week cannot be looked upon as a positive advantage. At the same time, by unfastening the branches from the wall or wires, a thorough re-arrangement in the training may be effected after the pruning has been done. If the old fruiting growths were removed from the trees after the fruiting season, there will be little pruning required now. That which is necessary, however, had best be done at the time the shoots are removed from the wall, when it may be easily seen what shoots can be spared. Subsequently both trees and wall should be well cleaned, leaving all in order for re-training just before the buds begin to open. The aim of the pruner should be the retention of sufficient bearing wood of medium strength, and well furnished with fruit-buds to cover the wall to the best advantage, allowing a space of about 4 inches between the young bearing

wood, which should radiate to the right and left from the centre of the tree, and from the upper side of the main shoots as much as possible. Before commencing the pruning of each tree, a general look over it should be given, and if any of the older branches can be spared, take them out. Short young branches not required for filling space may be cut back to three or four buds. A few short fruiting-spurs always develop many buds, and rarely fail to set fruits. Lay in all well-ripened young shoots at full length, shortening only those that are weak and immature, which should be cut back to about one-half their length, either to triple buds or to a single wood-bud. Where large branches are removed, the cut portion should be smoothed off with a sharp knife, and trim off any old snags left from the summer pruning.

Cleaning.—Trees infested with scale insects should be washed with a solution of Gishurst compound, or similar insecticide, using a new scrubbing-brush, and applying the mixture warm. If used on the young growths, the brush must be worked carefully, and in an upward direction, or many buds will be rubbed off. The trees may also be given a general spraying with the soda and potash mixture before the buds are further advanced, using it at the strength of 1 lb. of each ingredient to 14 gallons of warm rain-water.

THE FLOWER GARDEN.

By T. H. SLADE, Gardener to Lord POLTIMORE, Poltimore Park, Exeter.

Annals.—Where a continuous display is desired in the open, or there are mixed borders to fill up, or if a quantity of flowers will be necessary for cutting purposes, a sowing of annuals should be made now in pots or pans. Species that suffer greatly from transplantation had better be sown in small pots, from which transference to the open ground will not produce a check. A very useful flower for either purpose is the Sweet Sultan, white and yellow, and also the variety called Margarita, but it is one of those plants that must be sown in small pots. Sweet Sultan in some soils is very apt to dwindle away and die. Where this has happened, if the ground is fairly rich, work in some lime when digging the borders, or if planted in the mixed border add some to the spots where they are intended to be planted. When sowing the seeds, fill the $\frac{3}{4}$ -inch pots with light soil, and place three or four seeds in each pot, placing them in a temperature of 55° until the seed has germinated. Antirrhinums sown now will flower late in summer. Dianthus in variety should be sown, and Verbenas, which will make good plants for bedding purposes; Scabious, if not sown in the autumn; Pentstemons for late flowering, and Salpiglossis. Sow seeds of Salpiglossis in boxes or pans containing light soil. These plants transplant easily. A temperature of 55° will suit these until the seed has germinated. When the plants commence to grow, keep them growing slowly, and do not coddle them, but gradually inure them to a cooler temperature in readiness for planting out. They do not suffer when transplanted. There are many hardy and half-hardy annuals, and what may be liked in one garden may not be in another.

Celosias afford a nice change and variety in the flower-garden, but they do not thrive in some localities, being very liable to fail at the collar, whether planted out or plunged in pots. Sow seeds now, taking care they are of good strain.

Shrubby Calceolarias.—Seeds sown now would produce good plants by bedding-out time.

Ranunculuses, if not yet planted, should now be put in the ground, which should be worked well. Plant the roots in rows, in drills about 6 inches apart and 2 inches deep.

Nicotiana sylvestris and affinis.—Seeds of these Tobacco-plants should now be sown in pans of light soil, and placed in a temperature of 60°. *N. sylvestris* is a noble-looking plant for sub-tropical beds.

Dahlias may now be placed in a little heat, in a position where the growth will not be drawn up weakly. Cover the tubers with some light material, as leaf-soil. If additional stock is required, take off the young shoots with a small piece of the tuber attached when they are a few inches in length, and insert them in small pots of sandy soil. Place them in a propagating-frame, when they will soon root, if the cuttings are not too long or soft.

It is well to raise some young plants every year. When the tubers have made growth 6 inches long, split them up, leaving two or more shoots on each piece. Any so treated will make larger plants, and flower before the cuttings.

FRUITS UNDER GLASS.

By MALCOLM MCINTYRE, Gardener to Sir CHAS. TENNANT, The Glen, Innerleithen, Peeblesshire.

Cucumbers.—Assuming that seeds were sown last month, and the house intended for their reception was prepared at the same time, the pots or mounds will be in proper condition, and the plants quite strong enough for turning out. A soil temperature of 75° or 80° is none too high. Having secured this, place a neat stake in the centre of each mound, and secure the top to the trellis. Fruiting plants whose strength has been husbanded will now be in good bearing order, and as fruit for some time to come will be in great demand, every care should be taken to encourage quick growth of root and bine. Fire-heat cannot be dispensed with, no matter how good the materials used in the formation of the bed. It can nevertheless be made comparatively harmless by the liberal use of fermenting materials, keeping the evaporating troughs full of liquid, and by damping several times a day all available spaces with tepid water. In dark, dull weather do not syringe, but a thorough spraying of the foliage will do much good when there is 80° to 90° of sun heat. Water the plants when necessary with manure-liquid made from sheep-droppings and soot. Do not weaken the plants by over-cropping, but cut the fruits before they attain full size. As soon as the roots appear through the compost, give them a top-dressing of good loam and bone-meal, adding a little lime-rubble. Draw the soil well up around the stems, and keep the roof-glass clean by frequent washings.

Melons.—No time should be lost in getting the earliest seedlings transferred to their fruiting-pots or mounds. It is desirable to encourage the plants as fast as possible, and this cannot be better done than by the use of fermenting material and fire-heat combined. A hot-bed of horse-dung and leaves well mixed is necessary at this season of the year, to keep the atmosphere of the house moist. Unlike the Cucumber, the Melon grows and fruits best in a strong loam, and being averse to earthing up of the stem, the little mounds should be made quite level with the rims of the pot. Water the young plants to be put out a short time in advance, and release the points of the roots with the finger as they are turned out, and plant very firmly. Maintain a moist atmosphere, and as soon as the roots are on the move, allow the plants the fullest exposure to sun. The temperature should range from 65° to 70° at night, and 75° by day, or 80° to 85° after the house has been closed.

Fruit Houses which are not Heated.—In seasons when there is a lack of sunshine, there is a difficulty in getting the wood of Peach, Nectarine, and Fig-trees to ripen satisfactorily, and this is especially the case if the branches are crowded. It is often necessary to freely thin out both the branches and young shoots at this time, though care should be taken not to lay in too many shoots during the summer. We sometimes see Fig-trees so tied, that the branches overlap one another; this is a great mistake. Those who have their trees bundled together and matted over may soon uncover them, and they may then be pruned and trained. If severe frosts occur subsequently, it will be advisable to cover the glass-roof with mats, as frosts are liable to destroy the greater portion of Peach, Nectarines, and Plum bloom in unheated houses. In order to have the blossoms both late and sturdy, keep the houses cool. After all risks of frost are over, the houses may be kept somewhat close by partly reducing the ventilation early in the afternoon. Although the houses may be kept cool, the trees must not be kept dry at the roots, as this may cause them to drop their fruit-buds.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HUSSEY PACKE, Esq., J.P. Prestwold Hall, Loughborough.

Zonal Pelargoniums for Winter Blooming.—If plants that have flowered up to the middle of January have been subsequently afforded a temperature of 50°, there will be sufficient suitable growths to supply cuttings for propagation. Select the strongest and most vigorous, and insert them singly in small 60-size pots, using a compost of

loam, leaf-mould, and sand. Afford them a watering to settle the sand about the cuttings, and place them in a temperature of 50° to 55°, where they may be slightly sprayed daily with the syringe until rooted. The old stock plants may be cut down to four or five eyes, shaken out and repotted, and subsequently placed in a frame, where they may be kept rather dry. These will afford flowering plants for the conservatory during the summer and early months of autumn. A list of the best varieties for winter-flowering will be found in the last vol. of the *Gardeners' Chronicle*, p. 394.

Ivy-leaved Pelargoniums.—Pot on plants that were rooted in autumn, which is the best season to propagate varieties of this section. By placing four or five cuttings in each pot, and removing them into larger pots as required, they afford abundance of bloom all through the summer and up to the end of the year. Twelve good varieties for pot-cultivation are Madame Crousse, M. de Lesseps, Rycroft Surprise, P. Crozy, Souvenir de Charles Turner, Beauty of Castle Hill, Jeanne d'Arc, Admiration, Mrs. Hawley, The Blush, Rose Queen, and Mrs. J. Day.

Chrysanthemums.—Take cuttings of the summer-flowering varieties that will be cultivated in pots, as Madame Desgranges, Mychett White, &c. Of the late-flowering varieties, those of W. H. Lincoln, Niveum, L. Canning, Princess Blanche, and Frank Wilcox, need to be propagated soon. Cuttings of the general collection of Japanese that were propagated in December are in a forward condition. Do not permit them to remain in the very small pots too long. When removing them to 3-inch pots use a compost containing turfy loam, leaf-soil, road-grit, and sand. Afford them a temperature of 50°, and keep them near to the glass. Air may be admitted on all favourable occasions.

Herbaceous Calceolarias should be removed into the pots in which they will flower, but take care not to "over-pot" them. Use a compost of good turfy loam, flaky leaf soil, a little cow-manure, and a liberal quantity of sand. Afford them a cool frame, with a base of ashes, which should be maintained damp at all times. Previous to potting, them dip the plants in a solution of soft-soap and water, 2 oz. of soap to each gallon of water. Vaporise as a preventative rather than a remedy against green-fly.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bicton, East Budleigh, Devonshire.

Celery.—The latest rows should be earthed up after a few dry days, care being taken that the soil is not thrown too much into the centre of the plants, and not banked above the latest-made leaves. A pinch of seed of some early kind should now be sown. Shallow pans containing light soil are best for present sowing. Afford a temperature of 60°, and give a little bottom-heat to assist the seeds to germinate.

Asparagus-beds.—Though the weather must control work to a great extent in this department (there is snow on the ground as I write), if Asparagus-beds were not top-dressed in the autumn, they should be afforded a mulch of well-decayed manure, so that the soluble parts may be washed in by the rains during the present month. At the end of March the remaining part may be lightly forked in between the rows. If not already prepared, a piece of ground should now be trenched quite 2 feet deep, and be heavily manured at the bottom as well as between the two spits to provide for a new plantation being made as soon as the shoots are pushing through the soil. Decomposed seaweed is an excellent manure for this crop, and the roots will revel in a fair amount of coarse sand. It is wise to plant a breadth each year if much forcing is done.

Artichokes, Globe.—This crop well repays a change of ground about every five years. In a severe winter the plants are liable to be killed, even if protected, and therefore a few dozen suckers or offsets should be potted up in October and plunged in coal ashes or tree leaves in a cold pit, where they can be afforded what other protection is necessary. Plant them out in April on ground treated as advised above for Asparagus. A new stock may be raised from seed sown this month, but it is not an advisable practice, as so many are apt to come weedy, and a year is lost in proving the best; the Purple-headed is considered the best variety.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY,	FEB. 12.	Royal Horticultural Society's Committee, and Annual General Meeting of Fellows at Westminster.
FRIDAY,	FEB. 15.	Royal Gardeners' Orphan Fund, Annual Meeting, at Essex Hall, Essex Street, Strand.

SALES.

MONDAY, FEB. 11.—Hardy Border Plants, Standard and Dwarf Roses, Lilies, Narcissus, Carnations, Tuberoses, &c., at Protheroe & Morris' Rooms.

TUESDAY, FEB. 12. Mr. H. W. Rendell will sell the Glass Structures, Stock, &c., at St. Mary's Nursery, Lower Edmonton, at 12 o'clock, providing the low reserve is not reached, as a going concern.

WEDNESDAY, FEB. 13.—Consignment of Japanese Lilies, Acers, Aspidistras, Tuberoses, Palm Seeds, Azaleas, Palms, Lily of the Valley, &c., at Protheroe & Morris' Rooms.—Standard Gooseberries and Currants (French), also English-grown Roses and American Pearl Tuberoses, Lilioms, Hardy Plants, &c., at Stevens' Rooms, King Street, Covent Garden.

FRIDAY, FEB. 15.—Choice collection of Orchids, consignment of Odontoglossum crispum, Hardy Border Plants, Standard and Dwarf Roses, Lilies, Narcissus, Carnations, Tuberoses, &c., at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—39°.

ACTUAL TEMPERATURES:—

LONDON.—February 6 (6 P.M.): Max. 40°; Min. 32°.

February 7.—Fair, light frost at night.

PROVINCES.—February 6 (6 P.M.): Max. 40°, Shetlands; Min. 34°, East Coast.

The report of the Council for the year 1900, which will be formally laid before the Society on the 12th inst., has been circulated among the Fellows. It is of a very encouraging and satisfactory character, contains little or no contentious matter, and bears testimony to the zeal and industry of the Council and officers.

The first subject noted is the grant of a new charter by her late Majesty, and the formulation of new bye-laws. Some of these latter seem still to require revision, but this can be done later on.

The list of awards lately published is a most useful publication, very carefully prepared, especially the portion relating to Orchids, which indeed is a document of scientific importance.

The expenditure at Chiswick is put down at £1,817, from which £337, representing the sale of surplus produce, has to be set off. The Chiswick students have done well at the various examinations, and Professor HENSLow has delivered sundry lectures at Chiswick for their benefit.

The shows at the Temple and at the Crystal Palace were very successful, but it is pointed out, with reference to the latter, that further financial support on the part of the Fellows is required, the more so as the Crystal Palace Company has diminished its contribution by one-half.

A deputation has been appointed to visit the show of Daffodils and spring flowers at Birmingham on April 24 and 25.

The *Journal* of the Society has been greatly improved, and its editor may be congratulated on the success of his efforts. Of itself, it furnishes more than an equivalent for the ordinary subscription.

The examinations were held, as usual, in April last, but an impression exists outside either that the examiners are too lenient, or that the standard should be raised.

The thanks of the Council are tendered to the donors of books, and to the members of the several committees for their disinterested labours.

"The selection of a suitable site for the new garden of the Society in celebration of its centenary is still occupying the attention of the Council." We hope the Council will continue to exercise the greatest caution in this matter. To embark on such a project would entail enormous expense, to meet which the few thousands which have been got together by the wise management of the Council are quite inadequate. Moreover, the lease at Chiswick has still nearly twenty years to run, so that there is really no immediate hurry to find a site, and some other means of celebrating the centenary can easily be devised. Chiswick, of course, is not an ideal spot, and cultivation is getting more and more difficult there every year; still, it would be a reflection on the superintendent to suppose that he is not fully competent to deal with the adverse conditions by which he is surrounded.

The Earl of ILCHESTER has been added to the Council, an appointment which will be received with great pleasure by the Fellows, as his lordship is well known for his addiction to horticultural pursuits at Holland House, Kensington, at Abbotsbury, and Melbury House, Dorset. Another great gardener is proposed to be elected on to the Council in the person of Captain HOLFORD, of Westonbirt, the Equerry to His MAJESTY. The Rev. HUGH A. BERNERS and Mr. H. B. MAY are also well known to and cordially appreciated by the horticultural body.

As to the financial statement, it appears that there is a balance on the right side of no less than £1639; and that the number of new Fellows is steadily increasing.

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The following notice has been circulated as to the election of new members of council:—"As the provisions of the new charter require that three members of the council shall resign every year, the Council have decided that one vacancy having occurred already by the lamented death of Mr. PHILIP CROWLEY, the other two vacancies shall be created by the resignation of F. DU CANE GODMAN, Esq., F.R.S., and of Dr. HUGO MÜLLER, F.R.S."

"The following gentlemen have been duly nominated to fill the vacancies, viz.:—Captain G. L. HOLFORD, Rev. HUGH A. BERNERS, M.A., and H. B. MAY, Esq."

"The following have been nominated for election as Vice-Presidents, viz.:—The Right Hon. JOSEPH CHAMBERLAIN, M.P., the Right Hon. the Earl of DUCIE, the Right Hon. Lord ROTHSCHILD, Baron Sir HENRY SCHRODER, Bart., and Sir FREDERICK WIGAN, Bart."

"The following have been nominated for election as officers, viz.:—Sir TREVOR LAWRENCE, Bart., V.M.H., President; J. GURNEY FOWLER, Esq., Treasurer; Rev. W. WILKS, M.A., Secretary; and ALFRED C. HARPER, Esq., Auditor."

"No other nomination having been received there is no occasion under the new charter to issue a balloting sheet."

With reference to the last paragraph, we would suggest that in future much longer notice should be given of the time when the Fellows can exercise their rights. On the present occasion, so far as we know, no one outside the Council had any desire to propose a Fellow for election, but if he had such a wish he would most probably have been baffled by finding he was too late. A notice as to the latest date on which

such nominations should be made should be published in the issue of the *Journal* preceding the annual meeting, or an intimation should be given in the horticultural press. This is so desirable that we hope another year the Council may see fit to remind the Fellows of their duties and privileges in what the French call *temps utile*.

RHUS COTINUS (see Supplementary Illustration).—The beautiful feathery inflorescence of this shrub always attracts attention, and has gained for it the name of the Wig-Plant. The long-stalked, oblong-obtuse leaves are also remarkable in autumn from the brilliancy of their gold and bronze coloration. The feathery appearance is due to the production of a large number of slender flower-stalks, which are covered with spreading hairs, but only a few of which produce flowers. What the significance of this arrangement may be, we do not know. The shrub is allied to the Sumacs, and is a native of the South of Europe, but quite hardy in English gardens. Our illustration was taken from a plant at Ribston Hall, Wetherby, Yorkshire, the residence of Major J. W. DENT.

ROYAL RECOGNITION.—On the morning of the removal of the mortal remains of our late SOVEREIGN, his MAJESTY personally presented Mr. G. NOBBS, Head Gardener at Osborne, with a gold breast-pin, in recognition of services rendered in connection with the obsequies of his late Royal Mistress. The pin is a crown of sapphires, surmounting the interwoven letters V.R.I. in pearls. Mr. NOBBS had the management of the floral arrangements of the Chapelle ardente. It is such marks as this Royal recognition that endear the Royal Family to those who have the honour of serving under them.

REMINISCENCES OF QUEEN VICTORIA.—Many years ago the QUEEN visited the conservatory of the Royal Horticultural Society at South Kensington, and was conducted through it by Lord ABERDARE, then President of the Society. In the course of their perambulation, Lord ABERDARE pointed out to her MAJESTY some flower (what, we do not remember) of the colour of port-wine. "Yes," said her MAJESTY, looking up to the President with a smile, "old port!"

—Not counting state processions, &c., in London, there were only three occasions when I saw the late QUEEN, the first was on the occasion of her first visit to Scotland after her marriage to Prince ALBERT. I was then one of the youngest apprentices in Scone Palace, and I shall never forget our elation at being sworn in to protect our QUEEN, nor our patriotism in patrolling the lawns and gardens round the palace for that purpose. The gentle smile and dignity of the QUEEN and PRINCE as they passed their raw but valiant defenders armed with their new batons will likewise always be remembered. The second occasion was when the QUEEN, with that graciousness that proved the greatest charm of her life to the end, invited the members of the National Rose Society and their friends, then holding their show in connection with the Windsor meeting, to visit the private grounds of Frogmore under the care of Mr. THOMAS, the present head. It was my happy privilege to go through these charming grounds with Dean HOLE. Neither the sights through these grounds, so crowded with tender memories, so full of natural—perhaps the best training grounds in horticulture for rising royalty in the world, can ever be forgotten. Some engagement kept the QUEEN away, but she sent several members of the royal family. I saw our well-beloved QUEEN once more at home in Windsor, and was quite close to her, and saluted her deferentially as became one of her most loyal subjects. In a moment the return came like a beam of light flashing over her face and cementing the devotion of her loyal subject. D. T. Fish.

WREATHS.—Messrs. JAMES CARTER & Co. supplied the following wreaths last week, amongst

others. These were greatly admired, and measured from 4 to 6 feet across:—1, A tribute of devoted loyalty, from His Highness the Nawab Sahib of Joonagad; 2, A tribute of loyalty and devotion, from His Highness Maharaja Bhavsingjee Thakore Sahib of Bhavnagar; 3, A tribute of profound respect and loyalty, from His Highness Sultan Mohamad Shah Sultan Aga Khan, K.C.I.E.; 4, "With deepest sympathy," from His Highness the Thakore Sahib of Morvi, G.C.I.E.; 5, A token of loyal respect, from His Highness the Maharaja of Kolhapur; 6, A humble tribute of respect and affection, from the Presidency of Bombay.

— Among the numerous floral wreaths despatched to Windsor from all parts of Europe, one of the most tasteful and appropriate was that of Messrs. LITTLE & BALLANTYNE, of Knowefield, who have long held the royal warrant as tradesmen. It was in the form of a large cross, and consisted of Camellias, Lily of the Valley, Roman Hyacinths, Violets, and other flowers, set off with purple ribbon. Fine taste had been exercised in grouping the colours, and the effect was charming.

— Among the floral tributes sent to Windsor on the occasion of the funeral of Queen VICTORIA was one despatched by Mr. HARTLAND of Cork, which consisted of a harp constructed wholly of Shamrock.

LINNEAN SOCIETY.—At the meeting of the Society held on Thursday, February 7, at 8 P.M., the terms of an humble address to His Most Gracious Majesty the KING, drawn up by the Council, was read from the chair at the commencement of the business of the meeting. The following paper was read, of which an abstract has been circulated:—Mr. H. M. BERNARD, M.A., F.L.S., on "The Necessity for a Provisional Nomenclature for those Forms of Life which cannot be at once arranged in a Natural System."

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees of this Society will take place on Tuesday next, February 12, in the Drill Hall, Buckingham Gate, S.W. The annual general meeting of the Fellows of the Society will be held at 3 P.M. on the same date at the Society's offices, 417, Victoria Street, Westminster, S.W.

THE SURVEYORS' INSTITUTION.—At the ordinary general meeting called for Monday, Jan. 28, 1901, for the further discussion of Mr. R. E. MIDDLETON's paper on "The Future of the London Water Supply," the President, on taking the chair, at once proposed the adjournment of the meeting out of respect to the memory of Her late Majesty QUEEN VICTORIA. The next ordinary general meeting will be held in the Lecture Hall of the institution on Monday, February 11, 1901, when the adjourned discussion on the paper read by Mr. R. E. MIDDLETON (Fellow), at the meeting of December 10, 1900, entitled "The Future of the London Water Supply," will be resumed. The chair will be taken at eight o'clock. The annual dinner has been altered from Wednesday, February 13, to Monday, March 4.

HORTICULTURAL CLUB.—The anniversary dinner will take place at the Hotel Windsor, Victoria Street, Westminster, at 6 P.M. on Tuesday, February 12. Sir J. T. D. LLEWELYN, Bart., will preside. The musical part of the entertainment will be arranged by Mr. BONYARD.

THE ROYAL GARDENERS' ORPHAN FUND.—The annual general meeting of the subscribers to this Fund will be held at the Essex Hall, Essex Street, Strand, London, W.C., on Friday next, February 15, for the purpose of receiving the report of the committee and statement of accounts for the past year; to elect officers for the ensuing year, to elect twelve children to the benefits of the Fund, and to transact such other business as may arise. The Chair will be taken at 3 P.M., and the poll will close at 4.30 P.M. At 6 P.M. the annual friendly

dinner of the committee and friends will take place at Carr's Restaurant, 265, Strand, under the presidency of Mr. HERBERT J. CUTBUSH.

THE NATIONAL CHRYSANTHEMUM SOCIETY'S outing in 1901 will be to Mr. A. TATE's pretty garden at Downside, Leatherhead, and will take place early in July.

FLOWERS IN SEASON.—We have recently inspected a number of flowers of Mr. W. BULL's varieties of Chinese Primulas, of which he has many plants in bloom at his establishment in the King's Road, Chelsea. We may especially note *Avalanche*, a vigorous grower, with dark green foliage, flowers white and good substance, eye yellow. Brilliant, a fringed flower of a rich shade of crimson; Comet, a new variety, of a rich carmine tint, a yellow throat, surrounded with a small maroon-coloured zone; Countess, a fringed variety, of a blush colour, the flowers having great substance; fulgens, bright reddish-carmine, with a small eye; and some double-flowered varieties, with the usual or fern-like foliage; and Duke of York, a very fine crimson.

SPRING-TIME AT KEW.—The approach of spring-time is already heralded by the Snowdrops. Some days ago we saw under several of the leafless trees quite a show of these welcome flowers. They are the first of the beautiful bulbous flowers that always are so effective at Kew, and are thought by many to be one of its most lovely features.

THE GREENHOUSE AT KEW owes much of its attractiveness at the present time to several groups of well-grown Cyclamens and Chinese Primroses, some of the latter being very fine in respect to the size and colour of the flowers, which are abundantly fringed. *Prunus japonica* fl.-pl., with upright shoots laden with purest double white flowers, and *P. pseudo-cerasus*, with larger blossoms of varying shades of pink colour, are also very effective, and are more suggestive of the glories of spring-time. *Acacia latifolia*, known for many years past in herbaria, but not, we believe, in cultivation until a year or two ago, is represented by a plant some 8 or 10 feet high, which is growing freely planted out in one of the central beds. The branches are now laden with pale yellow flowers, produced on rather dense axillary spikes 2 inches or so long. The phyllodia are 3 or 4 inches in length, and not so numerous as in some species. *Salvia Heerii* adds a little scarlet colour to the other tints in the house, and may be strongly recommended as a winter-blooming *Salvia* of very bright appearance. Of *Coleus thyrsoides*, a new species which has value as a flowering plant, and was figured in the *Gardeners' Chronicle*, Jan. 19, 1901, p. 39, there is a group of plants at present in flower, and it looks much happier here, than do other specimens in the stove, where they have become "leggy." Then there are groups of Lilies of the Valley, *Peristrophe speciosa*, *Azalea mollis* seedlings, *Spiraea media* (confusa), and *Allium neapolitanum*.

WEST INDIES.—West Indian papers just to hand contain full details of the third West Indian Agricultural Conference, held in Barbados, under the presidency of Dr. MORRIS, the Imperial Commissioner for Agriculture. We shall have occasion to advert to the proceedings of this interesting gathering in a subsequent issue.

MR. GUMBLETON AND HIS GARDEN.—The last number of the *Garden* contains an account by Mr. BURBIDGE of the treasures to be seen in Mr. GUMBLETON's most interesting garden at Belgrove, Queenstown, near Cork. A portrait of the owner is given in the same issue.

THE "ORCHID REVIEW" has been reduced in price to sixpence a month. The lowering of price by no means coincides with any diminution of the quantity or interest of the contents.

FRUIT FROM THE CAPE.—The R.M. steamship *Scot* arrived on the 25th ult. from the Cape with thirty-seven boxes of Apricots.

THE NEXT METROPOLITAN ROSE SHOW.—The remarkable success which has attended the annual shows of the Royal Horticultural Society in the Temple Gardens is well known, and it now appears likely that the Metropolitan exhibition of the National Rose Society will be visited by a greater number of persons than have had the opportunity of witnessing the beautiful displays that have been held at the Crystal Palace, Sydenham. A magnificent Rose show in the city of London will be sure to attract a good attendance! The following letter is from Mr. ED. MAWLEY, Hon. Sec. National Rose Society:—"With the kind permission of the Treasurer and Banchers of the Inner Temple, the Metropolitan exhibition of the National Rose Society will be held this year in the Inner Temple Gardens on Thursday, July 4, instead of at the Crystal Palace on July 6, as previously announced."

VEGETABLES FOR BERLIN.—The second consignment of Extra Select Musselburgh Leeks, consisting of 300 bunches of sixteen each, and weighing over one ton, was despatched to Berlin, per Leith and Hamburg steamer lately by Mr. THOMAS A. SCARLETT, vegetable broker, 23, Market Street, Edinburgh. They were grown by his brother Mr. JAMES W. SCARLETT, Sweethope, Musselburgh. It may also be mentioned that for several years past supplies of Spring Cabbage and June Broccoli have been sent to Her Majesty's purveyor at Aberdeen, during Her Majesty's stay at Balmoral, by the same parties for use in the royal kitchen. We have no doubt that some of the Leeks will reach the palace at Berlin, as the agent there supplies the Kaiser's establishment.

DUBBING.—The snowy weather has called the attention of gardeners and others engaged in out-of-door pursuits to the necessity of rendering their foot-gear waterproof, and for such purpose there is no equal to "Gishurstine," made by Price's Patent Candle Co., Ltd., Bittersea, S.W., and sold in 1s. and 6d. tins.

NOTES ON CHISWICK GARDEN.

It is many years since I wrote that the time would probably come when midsummer and late crops of Peaches would be grown on standards under glass instead of on walls, thus getting rid of training and nailing altogether, while securing trees of a size and fertility unattainable by any other means in the same time. I have never had a chance of carrying the plan out on a desirable scale, for want of glass structures of the right capacity; but I have estimated that if one started under glass with a standard tree with four or five one-year old shoots, on the extension system, it is practicable to have a crop of fifteen dozen good Peaches the year following from that one tree, and so on in proportion the years following. I have ripened five dozen fruits on wall standards the year after planting, and a flat wall-tree is just a section of a standard, and may be said to stand in the same relation to the latter that the gable of a house does to the whole building. These remarks are suggested by seeing a few days ago, at Chiswick, a house of the finest little standard Peaches that I have ever come across. The house is much too low for them, but Mr. Wright has cleverly managed to accommodate the trees to the situation so far, and they are now an object-lesson, the growth of the last few years having been all that could be desired. The shoots of last summer are sturdy, thoroughly well matured, and full of bud, the trees growing in quite the natural form. Mr. Wright seems to have no doubt about the system, and he told me that at Eastnor Castle, I think, there was a house of still finer trees.

In the same house there are horizontal-trained Peaches on the back wall which have been there a long time, but it would be interesting to learn how long, exactly, they have been there, and how they compare with the much younger standards in front

of them. Neither the Peach nor any other stone fruit can be grown to the best advantage on the horizontal system, and I should say that the long back wall of horizontals at Chiswick are proof of it, although by careful manipulation Mr. Wright has managed to keep the bottoms of the trees better furnished with branches than are usually seen; but I should suppose that he is not in love with the method any more than the writer, and Mr. Wright is a thorough gardener. That is about the most self-evident thing at Chiswick, if a stranger may be allowed to say as much. If Chiswick never did anything else but prove that standard Peaches, under equal conditions, are ten or twenty times more productive than wall-trained trees under glass, it would deserve credit. What one sits down to cynically contemplate before such trees as the Chiswick standards, is the difference between them and the popular "stump" creation of the hard pruner. The pyramid Pears there are, I presume, to be for ever extinguished in a bonfire when the gardens are given up. What monuments of perfectly useless labour! One of them ought to be preserved in a museum to interest future generations of gardeners.

The horizontally-trained Vines in one house are another feature at Chiswick. I have often noticed that Vines trained horizontally under a flat roof are very evenly furnished with good wood and good bunches of even size, well coloured. I suppose that is because the sap is not given an upward direction, so often the cause of Vines breaking too strongly at the top at the expense of the buds and bunches at the bottom. The Vines look well in this house. The collection of Figs is, perhaps, the finest thing in the garden, and when in fruit it should show fruit-growers what a prolific fruit-tree the Fig is, and what an excellent fruit far too seldom grown to sufficient extent. I have rarely seen such a fine lot of Figs in pots as there is now to be seen at Chiswick. The shoots are strong, well ripened, and full of fruit-buds. The wall of cordons is another feature. This wall has been quickly and completely covered in the space of a few years, and the trees are in bearing order, and afford a good example of what can be done in a short space of time in that way.

THE COUNCIL CHAMBER.

I have never been one of those who were troubled with a prodigious amount of respect for the Royal Horticultural Society and its committees, unless it was sometimes for its Scientific Committees, which, if it does not do much, is philosophical, and examines things on their merits, and I have never been inside the Society's gardens until now, though often near them; but one enters the old Council chamber with the feeling that there, at least, one is on classic ground. What a plain room, what dingy furniture, what simplicity! and there is a look of desolation about the whole apartment. Conscientious work has been done there. What kind of Fir, or other wood, are the library doors made of

What will the Society do with the big vinery? It is much too high for a vinery, and the Vines are quite out of workable reach; but what a flood of light it admits, and what grand rows of standard Peaches could be grown up the centre, with a forest of Figs round the sides, while hundredweights of Strawberries in pots might be grown round the sides on the floor! I remember at Dalkeith, many years ago, rows of British Queen Strawberry, each 400 feet long, used to fill the front of the long Peach and Apricot screen, and the crop of fruit for weight and excellence was such as I have never seen before or since, and it used to be ready just about a month before the outside crop came in.

A garden with the objects and pretensions of Chiswick, strikes an outsider as much too good a place for a "propagating pit" for the Fellows, or for carrying on pottering trials of Peas, Radishes, French Beans, &c., which anyone can try for himself. It might have accomplished bigger things than that. *J. Simpson.*

BOOK NOTICE.

A PRACTICAL GUIDE TO GARDEN PLANTS. By John Weathers. With 163 illustrations, pp. 1192, + ix. (Longmans, Green & Co.)

THE scope of this book may be clearly understood from the sub-title, which we cite in full:—"Containing descriptions of the hardiest and most beautiful annuals and biennials, hardy herbaceous and bulbous perennials, hardy water and bog plants, flowering and ornamental trees and shrubs, Conifers, hardy Ferns, hardy Bamboos and other ornamental grasses; also the best kinds of fruits and vegetables that may be grown in the open-air in the British

placed alphabetically. This arrangement is a great boon to those who have ever so slight an acquaintance with the orders. Everyone who has practical experience in the consultation of such books as this, will know how much time and labour are saved, and how much the knowledge of plants is facilitated, by grouping the genera under their natural orders. For those who are not familiar with them, a copious alphabetical index is provided in the present work. The accepted Latin names are employed for the natural orders, and, in addition, English names are given, many of which strike us as unnecessary or objectionable; for instance, instead of using the terms Crucifers, we have the "Wallflower" order, as if Cruciferae contained only

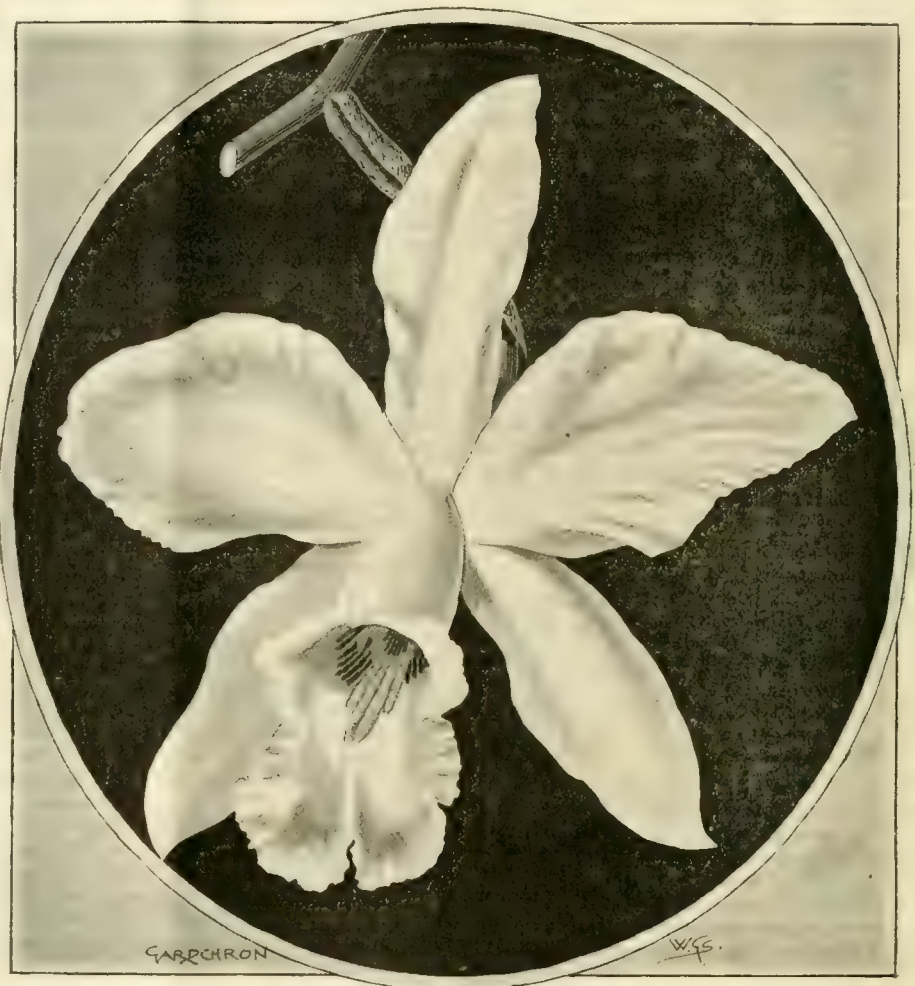


FIG. 39.—*LÆLIA ANCEPS SCHRODERIANA*.

(From a specimen shown by Mr. de B. Crawshaw at the R.H.S. meeting on Jan. 29. See also p. 87.)

Islands, with full and practical instructions as to culture and propagation."

The work, of which the contents are thus indicated, is divided into four parts. In Part I. the life history of plants is dealt with in a somewhat meagre fashion. The second part is devoted entirely to the description, culture, and propagation of hardy plants of all descriptions. Part III. comprises the description and cultivation of hardy fruits; and Part IV. contains similar information with regard to vegetables.

It will be seen from this, that Mr. Weathers' book is very comprehensive, and is so arranged as to be very serviceable to amateurs and to young practitioners. Much the greater portion of the volume, and the part that is the most satisfactorily carried out, is that devoted to the description and culture of hardy plants. A thousand genera and many thousands of species are, we are told, dealt with. The plants are arranged under their Natural Orders, the genera in each order being

Wallflowers. Leguminosae are styled the Laburnum and Broom order; Saxifragaceae are termed the Rock-foil order, and, horrible to relate, the Aroidaceae are called the Arum-Lily order, thus perpetuating the vulgar error that an Arum is a kind of Lily. Surely, if an English name were wanted, Aroids, or Arads, would answer the purpose. If English names are used at all, it should be those sanctioned by long usage, not such as are coined for the purpose by those who are writing books.

As a descriptive catalogue of hardy plants, with appropriate cultural notes, Mr. Weathers' book is excellent and trustworthy.

The fruit portion is similarly treated, and that it is up-to-date is shown by the article on the Loganberry. This section, however, is treated somewhat meagrely, little more than two pages being devoted to the Vine. The vegetable section also is less fully dealt with than that devoted to ornamental plants. A copious index concludes a volume which will be most valuable to the gardener for purposes of reference.

THE HORTICULTURAL HALL AT BOSTON, MASS.

To show what is being done elsewhere, we give a few illustrations showing a new building in course of construction at Boston, Mass., at a cost, including the land, of £100,000. The building is in the best part of the city, and covers about half an acre of ground. The Massachusetts Horticultural Society, Professor Sargent tells us, has a magnificent library, invested funds to the amount of £50,000, and an assured income of about £1,200. The rentals of the halls for various purposes will also bring in a considerable sum—say, £3,000 to £4,000 a year. The value of the ground on which the old building stood has increased so much that it was lately sold for about £20 a foot.

CULTURAL MEMORANDA.

THE GRAPE VINE.

THE late winter is the proper season for raising Vines from eyes. The shoots from which the eyes are made must be mature, such as are found on early

will grow apace, and repotting become necessary, that is at about the time when the second growth commences. At the first repotting a rich compost should be used. When the middle of the month of May is reached, the Vines for planting out should be at the least 4 feet in height, and as such they will have needed support from stakes, or have been trained to a trellis in some convenient house. Those to be grown for fruiting, or growing on in pots, should be repotted for the last time about the middle of April, making use of pots 12 to 14 inches in diameter, and should have received three repottings, viz., from 3-inch pots into 6, 9, and 12 to 14 inches.

The Vines must receive support from sticks, &c., so soon as they are 12 inches high, and be afforded ample space in which to develop their leaves. At 7 feet, pinch out the point and stop all the laterals at the first joint, with the exception of a few at the top, which should not for some time be hard stopped, otherwise the maiden-buds might burst into growth, and which should be kept dormant till the time they are to be started for fruiting, next year. When growth is complete, the canes assume a brown colour, when they should be stood



FIG. 40.—HORTICULTURAL HALL AT BOSTON FOR THE MASSACHUSETTS HORTICULTURAL SOCIETY.

Forced Vines. The lower half of such shoots should be cut into pieces, having half-inch of wood above and below the bud (eye), and these pieces should be pressed into small pots filled with a mellow loam, to which some mortar-rubble and spent Mushroom-manure are added, the pot being thoroughly dry and clean, and the soil moderately moist. Eyes should be pressed sufficiently deep in the centre of each pot, so as to leave the bud, which should be on the upper side, a trifle above the surface. Some gardeners remove a little of the soil, and put sand under and over the eyes. Afford the eyes a mild temperature for a week or ten days, and afterwards plunge the pots to the rim in a hot-bed frame with a bottom-heat of 80°, and top-heat ranging from 65° to 70°. But little if any damping or water to the soil will be required before roots are made. If they are rooted in a house, and the air is somewhat dry, place a small quantity of moss on each pot in order to prevent evaporation, or invert flower-pots over the eyes till the latter begin to move, when all coverings must be removed. Young Vines make rapid headway till they have reached the height of 4 inches, and show what would have been the flowers, which must be removed as soon as observed. For some time afterwards growth will be very slow, but the roots are forming, and after a time growth will recommence and continue very rapidly. The roots

outside, attaching the rods in an upward direction to a south wall till such times as they are required for top-dressing and housing them for to be started. Although some gardeners rely on cut-backs for early fruiting, I have for many years relied upon yearlings struck from eyes in the manner described. The best kind of soil is a rich loam that has been in store for some time, lime-rubble, bone-meal, and a little spent stable-dung. Farmyard liquid-manure, diluted to a safe strength, and a sprinkling of Thompson's Vine-manure occasionally, will afford extra stimulus. *H. Markham, Wrotham Park, Barnet.*

ENQUIRIES.

CACTUS SEEDS.—A correspondent, *A. F. F.*, would be greatly obliged if some reader of the *Gardeners' Chronicle* would tell him in these pages where he may purchase good seeds of Cactuses.

A correspondent, writing under initials "*J. K.*," would be much obliged if some reader of this journal would inform him of whom he could purchase the leaden statues now again become fashionable in gardens; also the names of some makers of sun-dials.

HOME CORRESPONDENCE.

GREAT SNOWFALL IN THE MIDLANDS.—Yesterday, February 4, the wind blew fairly strong from the south-east, bringing with it some snow. As evening wore on, the wind fell away, and then there came a liberal downfall of snow. At our country bedtime, 10.30, it was coming down freely, accompanied also by a falling barometer, and we awoke this morning to find an average depth of 8 inches of snow all over this district. Our young trees and shrubs were heavily laden with snow; we lost no time in going round with long rods and relieving them. It is to be hoped rain will come soon, and wash away this great depth of snow, otherwise it will be hard living for birds and all such life, which have to find their living out-of-doors. As I write, I hear avalanches of snow falling off the roof of my house. A *Yucca gloriosa* I had planted on a shelter side of my house, barely escaped destruction. During the early winter, a hedgehog had made for itself a comfortable nest under a closely branched young Spruce-tree, where it was sleepily hibernating; the late floods came, overflowed the banks of the stream close by to a depth of 3 feet, and so perished the poor hedgehog. A rick of hay I had near by was flooded to a depth of 18 inches, this set the rick a-heating, and to save the hay we were obliged to cut and tie it all up into trusses. My Lilies are, this winter, taking their chance in the out-door pond, but those pond-weeds, of which I have spoken in a previous paper, are making a determined push to become the sole occupants of the pond. Can none of your learned savants, in this matter, show us some light as to how these native aquatics got so quickly into my newly-dug pond. *W. Miller, Berkswell, near Coventry.*

WEATHER LORE FOR FEBRUARY:—

- "If February gives much snow, a fine summer it doth foreshow."
- "If February is dry, there is neither good corn nor good hay."
- "The badger peeps out of its hole on Candlemas day, and when he sees the sun shining, he draws back into his hole." (German).
- "So long as the bird sings before Candlemas, it will greet after it." (Scotch).
- "On Candlemas day, if the thorn hangs a drop, then you are sure of a good Pea crop." *J. C.*

CHISWICK.—The annual meeting of the Royal Horticultural Society is at hand, and the question of the formation of a new Chiswick will probably be discussed. Will you allow me, who am neither an exhibitor nor a nurseryman, to say a word on the subject? My views are probably those of thousands of amateurs—not necessarily Fellows of the Society—who attend the shows to learn what advances are being made in horticulture, and care for nothing else. I believe everybody agrees that a building in which the shows could be held is the great desideratum of the Society. How to get the money to build it is the difficulty. The annexed figures taken from the last balance-sheet show that, by giving up Chiswick, about £2,400 a year can be saved. This represents 4 per cent. on £60,000, whether this is enough to erect a sufficient building, or whether this amount could be raised on debentures, are questions beyond my ken; but it appears to me a matter worth considering. Net cost of Chiswick (after deducting £337 credit balance) £1,480; costs of shows [at Drill Hall and elsewhere, not at Chiswick], &c., £1,315; total, £2,795. Allow for ground-rent, rates, &c., £395; available as above for interest, £2,400. I do not know whether anything could be got for the remainder of the Chiswick lease, but the above is intended merely as a very rough estimate in order to raise the question. *F. L. S.*

SCHEDULE MAKING AND THE GARDENING CHARITIES.—Now that the time of year has arrived when so many committees are meeting all up and down the country, to compile schedules of prizes for the forthcoming season in connection with horticultural societies, it seems to me to be a very opportune time to remind gardeners who act on committees what a power for good they possess, inasmuch as they now may advocate the claims of the gardening charities being remembered at the forthcoming shows. I am glad to know that some societies annually make a grant from their funds,

others have a sale of flowers and plants for the benefit of some charitable object in which they are interested, and at some shows we see the collecting boxes of the Gardeners' Orphan Fund. A careful study of the matter convinces me that those horticultural societies which give back again in some form part of the money taken at the gates, never suffer by so doing; in fact, if Shrewsbury may be quoted as an example, it would seem as though the thousands of pounds they have spent for the good of the town has been greatly appreciated, and the yearly increase of income is due not only to the fact of the show being so fine, but there is a feeling that the surplus funds will be devoted to a useful purpose; therefore there are many thousands who willingly support it on that account. I am convinced that there are many societies that could easily raise £5 or £10 yearly for such splendid institutions as the Gardeners' Royal Benevolent and the Royal Gardeners' Orphan Fund, at the same time make known the objects of the funds being raised in the Society's district, thereby creating more interest amongst gardeners and employers alike. Seven years ago a Chrysanthemum Society was formed in the town of Chesterfield, to improve the cultivation of Chrysanthemums in the district, to hold shows, &c., a committee signing a guarantee fund to pay 10s. each if income did not meet expenditure; on the other hand, pledging themselves to do what they could for the gardening charities. The first show was very encouraging (until time for opening), when the public did not attend as they were expected to do, in fact, the Gardeners' Orphan Fund did not derive any benefit, as ten per cent had to be deducted from the very modest prizes to allow of the year ending with a balance of 2s. A year later a guinea was sent up by the society, two guineas were sent up in 1896, gradually increasing till 1899, when £13 16s was raised, and in December last the donation from the Chesterfield Society was £40. For the benefit of those who have not attempted anything of the kind, let me say a plant and flower stall is not only a means of helping a deserving cause, but in a manufacturing district it is a pleasant way of inducing folks to begin to appreciate flowers by asking them to buy a plant such as you know will be of some service to them. An estimable man in the trade procures a lot of plants for us from London at trade prices, they are sold at retail price, we give the profits to the Gardeners' Orphan Fund, and he kindly takes back all the surplus, so we have no loss. Then each gardener, with consent of his employer, grows one or two bushes of Chrysanthemums for "the Orphans," the flowers from which are cut with plenty of stem and brought to the stall, where the wives of officials and gardeners quickly dispose of them. A page is devoted in the schedule yearly to advertise the Gardeners' Orphan Fund, and this system might be made more of by other societies, as the cost of printing is small, and every committee should be willing to advocate including advertisements of the gardening charities in their schedules free of charge. As the total income of Chesterfield Chrysanthemum Society is £200 this year, it appears to us that a sum of £40 is a sum of which we may feel pleased; but certainly other societies with larger incomes may easily make such a sum look small. *W. Parkes, Hon. Sec., Whittington Hall Gardens, Chesterfield.*

SWAINSONA ALBA AS A BEDDING PLANT.

During the last few years I have practised with a fair amount of success the raising of seedling Swainsonias for bedding purposes. This plant, bedded out on a carpet of *Begonia semperflorens* Vernon, or a pale blue *Viola*, such as John Quarter, and the bed finished with a suitable edging, has a light and graceful effect not excelled by many plants. When planted out, Swainsonias lose their partially climbing habit, and become nearly erect, rarely growing higher than 2½ feet in a season. The fine-cut pale green foliage and the purity of the white flowers make the plant specially suited for growing in this isolated fashion. With us, in Essex, the seasons have been favourable for the production of seed; and seed is saved only from plants having a compact habit. If a seedling has a straggling growth, it is at once rejected. The seed is sown in the late autumn, and seedlings potted off singly into 60's when large enough to be handled, and they are wintered on a shelf in an intermediate-house. When the young plants have become established, the points of the shoots are pinched out, in order to induce suckers

to form at the base of the stem. In the spring the stronger plants are shifted into 8-inch pots by preference, and the smaller ones into 48's. A fairly porous soil with some peat in it

not be stiffly tied up, but be loosely looped up. If properly hardened off, well furnished plants will be ready for bedding-out early in the month of June. The points nipped off root readily, but they

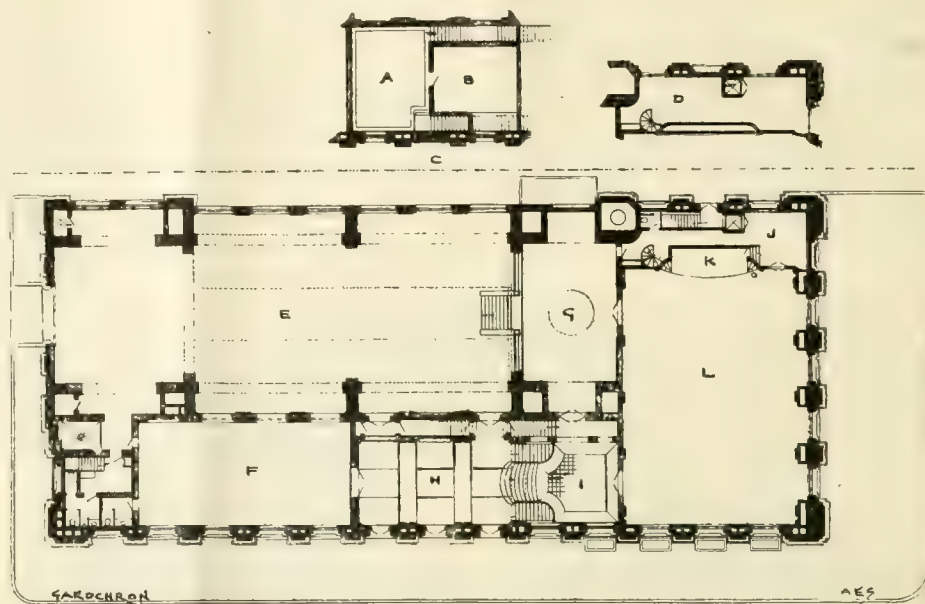


FIG. 41.—BOSTON HORTICULTURAL HALL: FIRST-FLOOR PLAN. (SEE P. 95.)

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| A, Staircase-landing. | G, Loggia. |
| B, Vestibule. | H, Vestibule. |
| C, Mezzanine floor over vestibule. | I, Lobby. |
| D, Mezzanine. | J, Service-room. |
| E, Large exhibition-hall, 122 x 52 feet. | K, Platform. |
| F, Small exhibition-hall, 57 x 28 feet. | L, Lecture-room, 68 x 48 feet. |

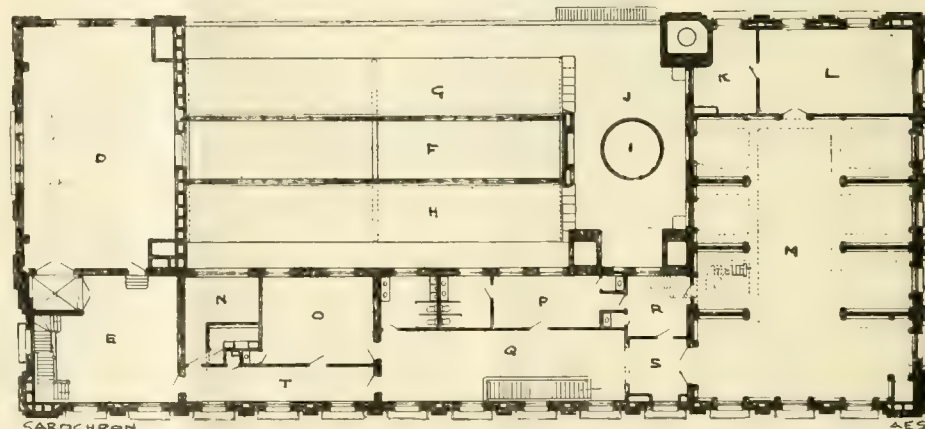


FIG. 42.—BOSTON HORTICULTURAL HALL: SECOND-FLOOR PLAN. (SEE P. 95.)

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|--------------------------------|-----------------------------------|
| A, B, C, D, Mezzanine. | L, Newspaper-room, 35 x 19½ feet. |
| E, Workroom, 33½ x 29 feet. | M, Library, 49½ x 65 feet. |
| F, Over large exhibition-hall. | N, Photographing-room. |
| G, Slate-roof. | O, Treasurer's office. |
| H, Slate-roof. | P, Cataloguing. |
| I, Skylight. | Q, Hall, 60½ x 16½ feet. |
| J, Composition-room. | R, Librarian's room. |
| K, Special study. | S, Vestibule. |

is suitable. When re-established, the points may require stopping again, but this matter should not be over done. As by this time the suckers will be gaining strength, the shoots should be left to grow naturally; the plant must

scarcely make such good plants as seedlings. Plants so treated and carefully lifted from the beds, and wintered in a greenhouse, make furnishing plants for the conservatory the following season. *James Machar.*

PRUNUS DAVIDIANA IN SOUTH-WEST SCOTLAND.—I hope that the paragraph upon this beautiful shrub in the *Gardeners' Chronicle* of February 2 will attract the attention of those who care for early flowers. It has been in bloom with me for some time, and is very pleasing indeed. The white form is prettier than the pink one, and my small tree is still very attractive, although we have had some sharp frosts since it came into bloom. I give neither the white nor the pink form any protection, and they always come into bloom early in the new year. If it were better known, *Prunus Davidiana* would become a great favourite with those who stay at home in winter. *S. Arnott, Carselhorn-by-Dumfries, N.B.*

CHIMONANTHUS FRAGRANS.—A short time ago I visited the fine gardens of Carlton Towers in the East Riding of Yorkshire, where I had the pleasure of seeing two fine specimens of this grand old winter-flowering plant most profusely laden from top to bottom with their deliciously fragrant flowers. They were growing on walls with a southern and western aspect respectively. Mr. Nicholls, the head-gardener, is justly proud of these, as the *Chimonanthus fragrans* is so seldom found north of the Trent. The soil in which these plants are growing is a deep, light, sandy loam. *Alfred Gault, Leeds.*

ADIANTUM CAPILLUS-VENERIS IMBRICATUM.—Since replying to Mr. Sandford's note, I have put down some pinnales in sand and sphagnum-moss, and now have some plants making their first small frondlets, several appearing round the margins of some of the pinnales. The fronds may be laid down entire, or the pinnales taken off and put in singly; the latter is, perhaps, the better manner, as the margins can be kept close on the surface, which is necessary to ensure the tiny plants taking hold of the soil. Later, I shall be pleased to send examples of this mode of reproduction. Another interesting method by which some Ferns, as the British Hart's-tongue (*Scolopendrium vulgare*), may be propagated is as follows:—Cut into short lengths the lower portion of frond stem (or stipe), and place them in suitable material, and favourable conditions, when they will form buds or bulbils, which will eventually develop into young plants. It requires some care to succeed with these, as they are liable to premature decay instead of healing over where they are cut. *A. Hemsley.*

NEW PEARS.—I am not prepared to accept Mr. Turton's invitation, vide *Gardeners' Chronicle*, p. 48, to name varieties of Pears that ripen after December 1, introduced during the last forty years, and equal to the older varieties he mentions; it would require a life experience to be able to do so. I can, however, add several more new Pears to the two already mentioned, viz., *Madame Chaudy*, a greenish-looking fruit, in size large, of moderately good flavour at Poltimore; *Senateur Vaise*, a very promising variety, but ripening at a season when good Pears are plentiful, rind yellow, tinged with red on the sunny side, the flavour very good, and of middle size; *Directeur Hardy* is a delicious Pear, with a russety-bronze rind, above middle size, resembling in appearance *Beurré Hardy*, but of far superior quality. This variety was in season in November from a tree on a south wall. A later variety said to keep till March is *President Banabé*, which I have on trial, and hope to be able to report upon later in the season. The later Pears Mr. Turton mentions are very indifferent here, especially *Glout Morceau*; yet Mr. Garland, when gardener at Killerton, has grown fine fruits of this variety. *Josephine de Malines* is an uncertain variety; I have had one fair crop of fruit in five years. *Winter Nelis* is only good on a wall, which is what I have to rely on for my best Pears. Trees growing in the open garden here are not to be relied on for giving good fruits after they have been planted a few years. The soil here is of good quality but retentive of moisture. Although good-flavoured late Pears are cultivated at Poltimore, there is room for good-flavoured varieties of the size of *Doyenné du Comice*, and which will ripen later than that variety, and carry on the supply till March. *T. H. Slade, Poltimore Gardens, Devon.*

GREENING v. NON-GREENING OF POTATO-SETS.—Some years ago it used to be a common practice when Potatoes were ripe for lifting for seed to let them remain spread on the ground as lifted, to be greened and hardened by the sun's rays, but it has been almost entirely discontinued.

My treatment of sets after being lifted is to place them on the floor of a shed or building, and when weather does not permit of outside work, I look over them. They are kept dry and cool, but if weather becomes severe, they are covered with dry straw or bracken. The earliest varieties I always place in shallow boxes at the end of the year or early in January, placing the sets end up in the boxes, the tail end up or nose end down; in so doing you get the sprouts to come up the sides of the set, and they are more firmly secured. I find it best in the case of the earliest sets to leave only the best single sprout, rubbing off all others, and to plant them with a Potato-dibber. The general stock of seed tubers may be spread out on a floor if there are not sufficient boxes, because I like all tubers to be sprouted when they are planted. It may appear a good deal of trouble, but it repays, as your correspondent well says; bad culture affects results in crop, quality, and disease. *R. E. Williams, Tower Hill, Brentwood, Essex.*

—This practice used to be common with the best gardeners in Scotland, and is yet, I suppose. The theory on the subject, as far as I ever heard it expressed, was, that in a state of nature the Potato exposed its tuber to the light, and that in cultivation it does the same more or less, or that at all events the tubers are always close to the surface, often greened, and better matured than when deeply buried—hence the reason of earthing-up. What say the physiological authorities of the *Gardeners' Chronicle*? It is a fact, I suppose, that a greened Potato contains chlorophyll, that a buried one does not, and that in the former the constituents are so much altered that the tuber becomes poisonous. Does the greening, then, mature the Potato better, and is it more hardy, and hence more vigorous? My experience is, that greened sets are soundest, keep best, and are hardiest. I remember once a lot of Potatoes left lying on a walk to green, and just about to be stored, were unexpectedly exposed to a frost that it was thought would seriously injure ordinary Potatoes, but neither the buds nor the tubers were any the worse. I consider a greened Potato to be the nearest approach to a naturally and perfectly ripened Potato, and consequently the best for seed. We have Dr. Masters' authority for the fact that Potatoes, when not earthed up, are close to the surface of the soil, or even lie above it (*Encyclopædia Britannica*). What is an early Potato? Is it one that ripens early, or one that is fit for use soonest? I ask this because I believe there are some varieties that produce tubers big enough for cooking purposes about as soon as the earliest, but which are really second earlies as regards the time of ripening. An important point, in the culture of early Potatoes, is that the tubers swell faster, and are fit for use sooner when the ridges of soil are exposed to the light. In other words, close planting that causes the haulm to meet early in the rows and cover the ground, retards the progress of the tubers. If by any practicable means we could expose the ridges to the sun, I believe that the crop could be accelerated by ten days or a fortnight; and, not only that, I feel sure the disease would be less destructive, for a very luxuriant haulm quite covering the soil encourages the disease by keeping the soil too moist when the tubers begin to ripen. I have often noticed the effect of exposure of the soil, and last year I had a good example of it. In the first week of April, I planted, unsprouted, thoroughly greened sets of *Knowfield Early Round*, on a south border, and so wide apart that the soil was never covered, and the haulm being dwarf, the ridges got the sun pretty fully, till the crop was ready. My neighbour, a successful amateur, had prided himself for years on always having early Potatoes before anyone else, from a warm south border against a wall. He put in his sets about ten days before mine, in March, his variety being the *Duke of York*, one of the very earliest, which the *Knowfield Round* is not. He planted so closely on his well-manured ground that the tops met very early, were too crowded indeed. On the longest day I dug up two dishes from my most exposed row next the walk, the tubers being bigger than golf balls considerably, and one of the dishes I sent to my neighbour, much to his surprise, and eight days after he sent me the first dish of the "Duke" not quite so large as mine. By July 2, I was planting out my Strawberry runners where the *Knowfields* had been, and the latter were so fine that what I did not need

I readily sold to a greengrocer—the first home-grown Potatoes he had in his shop. It might not be a profitable practice to adopt generally, but I have no doubt that early Potatoes could be had much sooner if every plant could stand by itself, and the stems be supported so that the light might shine on the surface of the soil. *J. Simpson, Yorkshire.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

JANUARY 29.—Present: Dr. M. T. Masters, in the chair; and Mr. Bowles, Rev. W. Wilks, and Rev. G. Henslow, Hon. Sec.

Bryonia dioica root.—Mr. W. G. SMITH sent an enormous root of the common Bryony. He says that the weight, after being kept for two months in a dry room, was just over 21 lb., and had not the ends of thick branching roots been broken off, it would have been at least 5 lb. heavier. The length of its broken condition was 2 feet; the circumference at the middle was 22½ inches. It was dug out of brick-earth at Caddington Hill, near Dunstable. It appears to me to exceed the average size, for Dr. R. Hogg writes in his *Vegetable Kingdom*:—"The roots are of an immense size, sometimes a foot or 2 feet long, and as thick as a man's arm." It is occasionally offered for sale as the "Mandrake," but the latter is not a British plant. The root abounds in starch, which could be extracted by grating it to a pulp and straining with cold water; but the juice is decidedly poisonous, as are also the berries of the Bryony.

Abies lasiocarpa var. *arizonica*.—Foliage and bark of this new variety were sent by Herr H. HENSEL, from Darmstadt. Though the species ranges from Oregon to New Mexico, this variety only occurs on the mountains of Arizona. The bark is remarkable in being of a creamy colour, and corky in nature. The foliage is bright glaucous green above, but white below, probably due to its mountain habitat. Herr HENSEL observes that he has succeeded in importing and establishing this tree, which he names *Abies arizonica* (Merriam), var. *arizonica*. The plants were collected at an altitude of from 7,250 to 10,000 feet, the temperature being as low as -25° to -30° (C.), or -13° to -22° (F.).

Austrian Rhubarb.—Specimens were sent by Mr. SUTTON of this Rhubarb, alluded to at the last meeting. The stems are very slender, are about a foot long, of a bright scarlet colour.

Pinus austriaca attacked by beetle.—A branch perforated by some beetle was received from a resident of Fordington, Dorchester. It was sent to Mr. McLACHLAN for determination.

Crocus species and varieties.—An interesting series was exhibited by Mr. E. A. BOWLES, of Myddelton House, Waltham Cross, Herts, who contributed the following particulars:—

C. bitorus v. *argenteus*.—An abnormal bloom with eight perianth segments and five style branches. *V. estriatus*.—The unstriped form from Florence. *V. Leichtlini*.—A small-flowered form intermediate between *v. estriatus* and *v. nubigenus*, pale blue, external surface of outer segments yellowish, with broad band of pale blue down the centre; anthers of a curious shade of greenish-grey. This tendency to melanism in anthers of *Crocus* of the section *annulati* of Maw was further illustrated by specimens of *C. Crawii*, in which the anthers are a deep chocolate, and *C. chrysanthus* vars. *fuscescens* and *fusconervatus*, with anthers of a dark smoke colour and the typical form of *C. chrysanthus*, in which the bars at base of the anthers are tipped with black.

C. Korolkowi in two vars. *a*. The type as distributed by Dr. Regel, and figured by Maw: a small, shy flowering, late form; external surface of outer segments grained with rich brown, throat externally nearly black. *b*. Larger, paler, very floriferous and robust in habit; in bloom three weeks earlier; external graining grey, greenish-blue at throat.

C. ancyrensis.—Type and a specimen externally feathered with brown, a variation not hitherto noticed in this species.

Crocus Fleischeri, a delicate species, with long, narrow perianth segments, white, the three outer externally lined purple; *v. albus*, without the external purple markings except at the throat, and, contrary to rule with albino forms, has the appearance of being a more robust form, with wider perianth segments.

C. Balansa, an abnormal bloom, semi-double, of the form with outer segments externally rich mahogany-colour.

C. dalmaticus, the true plant, with large, very pale mauve flowers, outer surface of outer segments pale buff, veined with grey at the base.

C. Tomassinianus, pale and dark varieties.

C. Imperati, several varieties.

All from open ground except *Fleischeri* and *Korolkowi* type, which were grown in a cold frame.

LINNEAN.

JANUARY 17.—Prof. S. H. Vines, M.A., F.R.S., President, in the Chair.

The President announced that the "Bressa Prize," offered by the "Académie Royale des Sciences de Turin," would be awarded for the most striking and useful discovery in physical and experimental science, natural history, pure and applied mathematics, physiology, not excluding geology, history, geography, and obstetrics. The value of the prize offered is 9000 francs, or nearly £400, and the competition is open to experts and inventors of all nations, the competition closing on December 31, 1902.

The President also announced that the Imperial and Royal Zoological and Botanical Society of Vienna would celebrate its Jubilee anniversary on March 30, 1901, to which representatives of other scientific societies were cordially invited. A notification from those intending to be present is requested not later than the middle of February.

Mr. S. Pace exhibited and made remarks on some pearl oysters and other specimens illustrating the formation and development of pearls.

Mr. C. T. Drury, F.L.S., exhibited a hybrid between *Ceterach officinarum* and *Scolopendrium vulgare*, which he had received from the late Mr. E. J. Lowe, F.R.S. The fronds were of somewhat foliose *Ceterach* form, but entirely devoid of scales, and with the upper third confluent, resembling the tip of a *Scolopendrium* frond, the fructification partly *Scolopendroid* and partly *Asplenoid*. From this combination of characters, the exhibitor considered the plant to be a true hybrid between the species named.

Mr. C. H. Wright, A.L.S., exhibited, on the other hand, numerous herbarium specimens of *Scolopendrium vulgare*, *Ceterach officinarum*, *Asplenium marinum*, *A. Hemionitis* (palustre), and *Scolopendrium nigripes*, by which last three species it was demonstrated that sori in faced pairs (*Scolopendrium* type) may not only appear on species classed as *Asplenium*, but that, on the other hand, simple *Asplenoid* sori may exist on species classed as *Scolopendrium* (e.g., *S. nigripes* and *A. Hemionitis* as exhibited and shown in a drawing by favour of the Kew authorities). Mr. Wright, therefore, was inclined to the opinion that the presumed hybrid was merely a form of *Asplenium marinum*, basing his opinion partly on the leathery nature of both *Scolopendrium vulgare* and *Ceterach* fronds as contrasted with the thin papery texture of the exhibits.

Mr. A. W. Bennett remarked that in view of the extremely wide difference between the genera, very strong evidence indeed would be required to establish the fact of hybridisation between them.

Mr. C. H. Wright entered at some length into the various modes of attempting cross-fertilisation in Ferns; but the factors of uncertainty are so difficult to eliminate, that until some delicate means have been devised for the actual transference by hand of individual antherozoids to alien archegonia, hybridity in Ferns can hardly be scientifically proved.

Mr. J. Fraser added some remarks bearing upon the indefinite classification of genera, evidenced by the exhibits with respect to fructification.

Mr. Drury, in reply, considered that the Kew examples demonstrated that a far closer alliance existed between *Scolopendrium vulgare* and the *Asplenium* than appeared on the surface, the presumed generic line between the forms of fructification being broken through, and hence the possibility of hybridising. He also pointed out that as *Asplenium marinum* had also very leathery fronds, this argument *per contra* failed. One of the specimens of *A. marinum* exhibited with *Scolopendroid* sori in quantity, found in France, might also, he considered, possibly be a natural hybrid with *S. vulgare*, especially as its fronds and some pinnae were peculiarly forked, dilated, and irregularly abnormal; while it is well known that the two species are often closely associated in their habitats, so that their spores might easily mix.

Dr. H. W. Maretts Tims, F.L.S., read a paper on "Tooth-gensis in the Cavida."

Dr. H. Lyster Jameson read a paper on the "Natural History and Experimental Cultivation of the Pearl Oysters (*Meleagrina*)," based upon his observations in New Guinea and Queensland.

KIDDERMINSTER HORTICULTURAL.

JANUARY 23.—On the above date the members of this Society met in the Lecture Hall of the Workmen's Club, Kidderminster, to hear a lecture by Mr. W. Crump, of Madresfield Court Gardens, Malvern, the subject being "The Cultivation of Apples and Pears." Mr. Crump devoted one part of his lecture to expounding the proper cultivation of the highest classes of fruit for dessert purposes, and gave some valuable instructions based upon his exceptional experience. Following this part of the subject, Mr. Crump spoke at some length upon the cultivation of fruit for commercial purposes. He declared that many of the farmers of this country were incorrigible in respect to the planting and maintaining of their orchards. Though it had been demonstrated again and again, and particularly by the Duke of Bedford, that the planting of orchards upon turf or with crops, was distinctly unprofitable, still the system is practised. At Ridgmont trees growing in open land made fifteen times more growth than when planted on grass. Mr. Crump regretted that there were not better and greater facilities for the distribution of fruit, and said that during the glut of fruit last year, he did not believe that the consumers had obtained it any cheaper than in former years. Growers had wasted it, and retailers had kept up the prices.

The means of bringing about a better system of grading, packing, and distribution of hardy fruits, said Mr. Crump, would most likely prove to be in co-operation. The lecture was received with very great appreciation by the audience, the Chairman being Alderman E. Parry.

NORTHAMPTONSHIRE CHRYS-
ANTHEMUM.

JANUARY 23.—The annual general meeting of this Society was held at the Peacock Hotel, Northampton, on the above date.

Mr. E. Draper, the Hon. Secretary, gave the annual report of the Committee, which expressed disappointment in the record of a deficit of £2 4s. 10d.

The balance-sheet showed on the receipt side, subscriptions and extra prize money, £92 3s. 6d.; money taken at the doors, £50 17s. 3d.; other receipts, £4 15s. 6d.; total, £147 16s. 3d. The prize money reached £90 13s. 6d., while the total expenditure was £152 11s. 1d. Of this, however, £2 10s. paid for vases was an asset, so that the loss on the year was only £2 4s. 10d. The report and balance-sheet were adopted with unanimity.

The Mayor was re-elected President. Mr. E. Draper, the painstaking Secretary, was re-elected.

MANCHESTER AND NORTH OF
ENGLAND ORCHID.

JANUARY 24.—Members of Committee present: Messrs. Ball, Statter, Warburton, Leemann, Holmes, Robson, Stevens, Cypher, Johnson, Upjohn, and Weathers (Hon. Sec.).

There was a fine display of good Orchids, and several magnificent collections of Orchid paintings, principally by J. L. MacFarlane.

Of paintings, J. LEEMANN, Esq., exhibited over 200, all of which were exquisite works of art, and interesting to the horticulturist.

T. STATTER, Esq., also made a display of Orchid pictures and many of them were notable; the painting of *Cattleya* × *Countess* of Derby, for example. We certainly do not see the actual flower so often as we should like.

Messrs. CHARLESWORTH & Co. sent a fine collection; as did Messrs. HUGH LOW & Co.

The Committee awarded Silver-gilt Medals to Messrs. STATTER and LEEMANN for their paintings, and Votes of Thanks to Messrs. LOW & Co. and CHARLESWORTH & Co.

Fifty plants were submitted to the Committee's inspection. Captain HURST, Hincley (gr., Mr. Dakin), sent an interesting set of *Cypripedium* hybrids, seven varieties of *C. × Adrastus* (*C. Boxalli* × *C. Leeanum superbum*); each had distinct varietal names. *C. × Adrastus* var. *Dakini* was selected by the Committee for an Award of Merit. It is remarkable to note the great divergence of forms in this cross, no two plants having much resemblance one to the other. From the same collection came two varieties of *C. × Grovesianum*, called *Dakini* and *punctatissimum*; also *C. × Lathamianum* var. *Burbagense*, and *C. × Deedmannianum* var. *rubrum* (Vote of Thanks).

J. R. FLETCHER, Esq., Whitefield (gr., Mr. Talbot), sent a small group of *Cypripediums*, all of which were hybrids (Vote of Thanks).

A. Z. LEES, Esq., Stretford, staged a nice little group of Orchids, consisting of *Dendrobiums*, *Cattleya Trianae*, and *Cypripediums* (Silver Medal).

O. O. WRIGLEY, Esq., Bury (gr., Mr. Rogers), exhibited five *Cypripediums*, none of which obtained any award. Two of the plants were apparently new, viz., *C. nigratum* and *C. virens*. They seem to be bastard forms of *C. purpuratum*; *C. × Argo-levigatum* was an interesting plant, and indicated its parentage prominently.

A. WATSON, Esq., Stretford, exhibited a plant of *Laelia anceps* *Sanderiana*.

A. WARBURTON, Esq., Haslingden (gr., Mr. Lofthouse), has named a beautiful variety of *Cypripedium* *insigne* in compliment to King Edward VII. It is a finely-formed flower, with markings not unlike those of "Harefield Hall var.," the whole of the flower, although without the least pretension to being an albino, being suffused with a colour which might be described as "old gold" (First-class Certificate). An Award of Merit was given to *Cattleya* × *callistoglossa*, "Bleu's var.," from the same owner.

E. O. SCHNEIDER, Esq., Whalley Range (gr., Mr. Hunt), exhibited a well-grown plant of *Dendrobium nobile* (Cultural Certificate).

S. GRATRIX, Esq., Whalley Range (gr., Mr. Cypher), exhibited a beautiful *Cattleya Trianae* called *Gratrixianum*, a finely-formed flower of great size, with a well-formed and richly-coloured lip (First-class Certificate).

J. LEEMANN, Esq., Heaton Mersey (gr., Mr. Edge), staged a fine group of plants, for which a Silver Medal was awarded. *Cochlidoda vulcanica* var. *grandiflorum* was well shown, and to it and to *Cattleya Trianae* var. *radiata* were voted Awards of Merit.

Mr. W. B. UPJOHN, Worsley, obtained an award of Merit for a rare *Miltonia* which appeared to be the variety of M. Clowesi known as *Lamarckiana*.

T. STATTER, Esq., Whitefield (gr., Mr. Johnson), exhibited two hybrid *Cypripediums*, viz., *C. × Madame Jules Hye* and *C. × annamense*; both received Awards of Merit. With regard to the latter hybrid, the name is surely very much out of place, the plant not having been raised in Annam.

Mr. A. J. KEELING, Bingley, staged a good group of *Cypripediums*, amongst which were *C. × Leeanum*, Keeling's var.,

C. Leeanum var. *elegans*, *C. insigne*, *Balle*, *Laelia anceps* *alba*, &c. (Silver Medal).

Messrs. HUGH LOW & Co. received an Award of Merit for *Cypripedium* × *Prewettii*. The same firm exhibited *C. Leeanum superbum* × *hirsutissimum*, and *C. Madame Georges Truffaut*.

P. THOMSON, Esq., Walton Grange, Stone (gr., Mr. Stevens), received an Award of Merit for *Odontoglossum crispum* The *Sidra*, a beautifully marked variety; and Cultural Certificates for magnificent plants of *Odontoglossum hystrix*, a spike bearing forty blossoms; and *O. puichellum*, majus, with over a dozen fine spikes. The latter plant was 2 feet across, and with leaves as green as grass (Vote of Thanks).

Mr. W. HOLMES, Timperley, exhibited a hybrid *Dendrobium*, the parents of which were *D. nobile* var. *Cypheri* × *D. heterocarpum*, and was given the dual name of *D. × heterocypther* (Award of Merit). *Cypripedium Lawre-Spicer* came from the same grower.

BECKENHAM HORTICULTURAL

JANUARY 25.—On the occasion of the meeting of this body of gardeners on the above date, Mr. T. W. Thornton in the Chair, a lecture on *Cypripediums* was given by Mr. H. J. Chapman, gr. to R. I. Measures, Esq., who said it was his intention to treat his subject from a gardening point of view. The geographical distribution of *Cypripediums* was very limited, and owing to the well-nigh impossibility of natural fertilisation taking place, there was a danger of them becoming extinct. *Cypripediums* were indigenous in the Indian monsoon region, on islands or groups of islands, generally elevated on ledges and in crevices of the rocks. The extinct British species, *Cypripedium calceolus*, was still fairly plentiful on the Continent. The *Selenipediums* of S. America were alluded to as being closely related, and yet if crossed, always produced a *Cypripedium*, or baffled everyone's skill to obtain a hybrid. *Cypripediums* under cultivation had produced a thousand distinct named varieties, yet most of the species were equal, if not superior to these, under good cultivation. The cultivation of the plants in hothouse, intermediate-house, and cool-house varieties, was described. Increase by division was best carried out by removing the young growths just when the roots are forming, but leaving the old pieces undisturbed. In raising plants from seed, it should be remembered, he said, that varieties of the same family always crossed the most freely. The kind of house best suited for growing these plants was one with a flattish roof, and furnished with means of admitting air freely over the hot-water pipes in front of the house. Roller-blinds made of Bamboo, reeds, &c., were recommended, as such helped to keep an even temperature in the house in the winter.

A number of questions elicited replies, among others, that the lecturer no longer used charcoal in the compost; and that *C. insigne* thrived in frames in summer placed to face the west. A difference of opinion arose with regard to the use of manures.

Miss N. Roberts and R. I. Measures, Esq., kindly lent a collection of paintings illustrating fifty-four varieties of *Cypripediums*.

Geo. E. Day, gr. to H. F. Simonds, Esq., exhibited fifteen varieties of Orchids.

A vote of thanks to Mr. Chapman concluded an interesting and profitable meeting. M. W.

LEICESTER CHRYSANTHEMUM.

JANUARY 25.—The annual meeting of this Society took place on the above date. The President, Alderman Collins, occupied the Chair. The financial statement revealed a substantial balance in hand of £61 18s.

Mr. R. G. Lawson, the Hon. Secretary, gave a financial history of the Society since its formation in 1887; the first annual meeting, he humorously remarked, taking place in a boat-house on the river one Sunday morning. The Chairman then presented the Secretary with a silver watch in recognition of his valuable services, the inscription being as follows:—"Presented by the subscribers of the Leicester Chrysanthemum Society to R. G. Lawson, Hon. Secretary, January, 1901."

The officers of the Society were re-elected.

READING & DISTRICT GARDENERS'
MUTUAL IMPROVEMENT.

THE fortnightly meeting was held in the Club Room, Old Abbey Restaurant, on Monday evening last, and was well attended. Mr. LEONARD G. SUTTON, the President, occupied the Chair, and in opening the meeting expressed the feelings of each of the members present by referring to the great loss the country had sustained by the death of Queen Victoria.

The subject which had been arranged for the evening was "Garden Roses," by Mr. G. Gordon, V.M.H., but owing to his sad bereavement, this lecture was postponed, and the evening was devoted to impromptu speaking on the following:—"Tomatoes," Mr. C. P. Cretchley, The Honey's Gardens, Twyford; "Melons," Mr. W. Barnes, gr., Bearwood; "Raspberries," Mr. Moody, Reading; "Potatoes for Early Use," Mr. H. Wilson, gr., Lower Redlands, Reading; "Zinnias," Mr. E. Fry, gr., Greenlands, Reading; "Freesias," Mr. R. Chambe lain, gr., Cressingham. Numerous questions were asked, an interesting discussion followed each subject.

Exhibits were staged by Mr. W. TOWNSEND, Sandhurst Lodge, consisting of *Spirea Louis Var Houtte*, *Deutzia Lemoinei*, *Staphylea colchica*, *Libonia floribunda*, and twenty-six varieties of *Helleborus*.

BRIXTON, STREATHAM, & CLAPHAM HORTICULTURAL.

At the recent annual general meeting of this Society, an interesting incident occurred. The Hon. Sec., Mr. W. Roupell, had intimated to the Committee that it was not his intention to seek re-election, as he no longer felt equal to perform the work in addition to his other duties. He was in the act of reading the balance-sheet when the President, N. N. Sherwood, Esq., V.M.H., entered the room. The chair was at once vacated for that gentleman, and Mr. Sherwood proceeded to state that he had been requested by the Committee to present a testimonial to Mr. Roupell in the shape of a cheque, contributed chiefly by members of the Society, and to thank him for his valuable services as Hon. Sec. during the past ten years. Mr. Sherwood spoke warmly of the progress the Society had made under Mr. Roupell's management, and expressed regret that the Society would lose the benefit of it in the future. He added that it would have afforded Mr. Roupell great pleasure to have read the many kind things said of him in the letters that accompanied the subscriptions.

Mr. Roupell thanked the President, and all those who had contributed to the testimonial, for the kind feeling expressed by Mr. Sherwood, and for the handsome present. He assured the members that he would continue to give them all the help he could, and as Vice-President ever take an active interest in the Society.

The annual show was for a series of years held at the Congregational Hall, Brixton Hill, and elsewhere in the neighbourhood, but in 1890, when Mr. Roupell became Hon. Sec., it was decided to hold the show for the first time in the large hall at Streatham, then recently built, in the hope that the receipts, which had several times shown a falling-off, would improve. Since then the Society has steadily prospered, and every year the prize money has been paid in full. It is, however, now thought that the time has arrived when another change could be made with advantage, and after considerable discussion a sub-committee was appointed to collect information, and to obtain, if possible, a guarantee from the Brixton residents against loss in the event of the show being removed from Streatham to Brixton. The meeting was then adjourned to the 30th ult., and the report of the sub-committee proving to be favourable, it was at that date finally resolved that the Annual Festival (the 42nd) shall be held this year at the Brixton Hall on October 30 and 31.

NATIONAL CHRYSANTHEMUM.

ANNUAL MEETING.

FEBRUARY 4.—The annual general meeting of the members of the National Chrysanthemum Society was held at Carr's Restaurant, Strand, on the above date, there being a moderate attendance. Mr. Chas. E. Shea presided, and amongst those present we noticed Messrs. C. E. Wilkins (Treasurer), R. Dean (Secretary), C. Harman Payne, J. W. Moorman, R. P. Glen-dinning, W. Howe, J. F. McLeod, Percy Waterer, J. Witty, S. Mortimer, J. W. Wilkinson, D. B. Crane, H. J. Jones, T. Bevan, W. Mease, W. Cutbush, Seward, Cuthbert, Berridge, Cholmonley, and McKerchar.

In opening the business of the meeting, the chairman pleaded that the members would remember that the first clause in the committee's report, which described the National Chrysanthemum Society as the head of all floricultural societies, imposed upon them a responsibility inseparable from greatness. He had been told that the meeting would be a disagreeable one, and two years ago when he was going to occupy a similar position at one of their annual meetings he was told exactly the same thing. In the former case the expected did not happen, and he believed that the meeting that night would be characterised by order and a sense of business duty. Then followed some excellent remarks upon the misfortune the country has suffered in the decease of Queen Victoria. He would not, he said, propose any resolution, because that would suggest that there was a possibility of dissent, and he was sure they all felt the same upon this subject. He would propose a resolution of sympathy with Mr. Robert Ballantyne, a very old member of the society, who has just lost his eldest son by death, and after it had been seconded by Mr. Moorman, the resolution was carried with unanimity.

A letter from Mr. Needs was read by the Secretary, in which that gentleman resigned his place upon the committee, owing to the differences that existed in that body.

REPORT OF EXECUTIVE COMMITTEE.

As usual, the report commenced with an expression of congratulation, and a statement to the effect that the National Chrysanthemum Society "maintains its position at the head of the special floricultural societies of the United Kingdom." The Society's exhibitions in 1900 were properly described as very successful ones, remarkable for "the high order of merit which characterised them." The thanks of the Committee were tendered to the President, Mr. H. J. Jones, Mr. P. Waterer, and other members for special prizes they had given. The next paragraph stated that greater encouragement will be given in respect to the production of early-flowering varieties at the October show, and certain modifications are to be made in the conditions governing the competition in the President's group class. The Floral Committee had met on seven occasions during the year, and had awarded to novelties eighteen First-class Certificates, eight Awards of Merit, and three Commendations. The new method of point-

judging these novelties is approved. Reference was made to the visit of a deputation from the National Chrysanthemum Society to Paris, and to an exhibit made by them at the Paris Exhibition, also to the visit of a deputation from the French National Chrysanthemum Society to London in connection with the November exhibition. Regret was expressed that some of the suburban societies had cancelled their affiliation through lack of support in the several districts, and the Committee hoped to introduce a scheme under which affiliation will be made more advantageous to societies. The exhibitions of the Society in 1901 will be held in the Royal Aquarium, Westminster, on the usual terms.

Some of the principal items in "receipts" were: subscriptions, £257 17s. 1d.; donations and special prizes, £86 16s. 6d.; from Royal Aquarium Company, £375; affiliation fees, £71 19s.; and medals, &c., affiliated societies, £89 5s. 7d. There was a balance in cash book of £81 14s., and at bank on the last day of 1900 of £201 5s. 3d.; total receipts, £1,093 12s. 7d. Upon the expenditure side, a sum of £485 6s. was paid to prizes, and in addition a large number of medals were awarded; printing and stationery, £62 17s. 7d.; medals and engraving, £109 2s. 3d.; Secretary's salary, £100; show expenses, £67 12s. 7d., and petty cash, £54 6s. 8d. There is now a reserve fund of over £100, and a balance of £233 13s. is shown of assets over liabilities.

The Chairman, in proposing the adoption of the report and balance-sheet, drew the attention of the meeting to the wording of the second paragraph:—"If its membership does not increase quite so rapidly as in previous years, a fair average is maintained." He did not think that such an expression was quite representative of the circumstances, for there had been a slight decrease in the last two years. If the meeting thought it desirable to modify this expression it might do so, but the Chairman would leave the matter with the members. He congratulated the Society upon the excellence of the blooms shown at its exhibitions, and upon the slight breaking away from the trammels of staging shown by the institution of the vase class. This was excellent, but they had not gone far enough. He thought, also, that the public was desirous of seeing the decorative qualities of the Chrysanthemum shown to a greater degree at their exhibitions. The ladies did not like the great exhibition blooms, and if the Society was going to fight the ladies, they would have an uphill task.

Mr. H. J. Jones seconded the adoption of the report and balance-sheet, after which a member rose to propose that the words in the second paragraph of the report, referred to by the Chairman, be deleted. He thought the Society should not perpetuate what was nothing less than an untruth. Messrs. Percy Waterer and J. Moorman, were in favour of retaining the words, but Mr. C. E. Wilkins, who read a quotation from the *Gardeners' Magazine* upon the subject, differed. In the end it was unanimously decided to accept a proposition made by the Chairman, to so alter the wording that it will read, "The membership maintains a fair average."

Mr. J. T. Simpson remarked that in the items of expenditure, the useful work that the show committee had done in reducing the expenses was not shown; but Mr. Wilkins, who in company with Mr. Simpson constituted this committee, said he had bracketed together all expenses connected with the exhibitions that he could, so that the members might know exactly what their exhibitions cost them. He had no desire to minimise the saving effected by the show committee, which Mr. Simpson proved to be a sum of £12 7s. 6d. The report was adopted *nem. con.*

ELECTION OF OFFICERS.

Messrs. W. Cutbush, J. McKerchar, and J. W. Wilkinson were appointed scrutineers of the ballot. The ballot was only necessary, however, in the case of members of the committee, there being only one nomination in the cases of other officers.

Sir Edwin Saunders was unanimously re-elected President on the proposition of Mr. Bevan, seconded by Mr. McKerchar. Mr. C. E. Wilkins who was nominated for re-election to the post of Treasurer, by Messrs. Moorman and Bevan, refused, and said that he should cease to be a member of the Society after that night. He had been insulted twice; once by the Society's paid Secretary, and again by a member of the committee. The committee as a body had permitted the insults to be made with impunity, and he could not see upon what grounds, therefore, they could ask him to undertake for another period such an amount of honorary work as he has been doing; nor could he accept a vote of thanks which it was subsequently desired to present to him. Nevertheless, prominent members of the committee, assisted by the persuasion of the Chairman, endeavoured to get Mr. Wilkins to reconsider his decision, and Mr. Percy Waterer went so far as to say, that the Society would be unable to survive the loss of Mr. Wilkins, the other speakers agreeing that he had done more than any other man for the Society. The appeal failed. Thereupon Mr. Moorman was nominated as Treasurer by Messrs. Newell and H. J. Jones.

Mr. Percy Waterer was nominated by Messrs. Bevan and Moorman for re-election as Chairman of the Executive Committee, but stated that he should resign the position from circumstances he did not wish to enter into. Mr. Bevan was then nominated Chairman by Messrs. Foster and Witty, and Mr. Witty was elected to the Vice-chair.

Mr. C. Harman Payne was re-elected foreign corresponding Secretary.

Mr. Richard Dean was re-elected General Secretary on the nominations of Messrs. Simmons and Pullen; and Mr. C. W. Tagg was elected Auditor, in place of Mr. Berridge retired, including members of the committee retiring, but who sought re-election, and new nominations to fill vacancies caused by

resignations and readjustments of offices, &c., there were eighteen nominations to the Executive Committee. All of the following gentlemen were elected, receiving votes as indicated: W. Howe, 59; J. T. Simpson, 52; G. Langdon, 51; R. Ballantine, 50; T. J. Berridge, 48; W. Weeks, 46; A. Taylor, 46; R. C. Pulling, 45; F. Gilks, 44; T. L. Turk, 43; W. Owen, 40; E. F. Such, 37; F. Millson, 28; W. Logan, 26; J. W. Euston, 25; D. Phillips, 25; F. Bush, 16; A. W. Seabrook, 15.

OTHER BUSINESS.

Honorary Fellowships of the Society were conferred upon Mr. Percy Waterer and Mr. E. C. Jukes. On the proposition of Mr. Moorman, it was resolved to present Mr. Percy Waterer with an address on vellum, thanking him for his services during the time he has been chairman of the Executive Committee.

Mr. Wilkins proposed an alteration in Rule III., which would have prevented the vice-presidents of the Society from taking part and voting in the deliberations of the Executive Committee. This was rejected.

An alteration of Rule VIII., also proposed by Mr. Wilkins, was accepted. It was merely a transposition of words, as Mr. Wilkins observed, in order to put the horse before the cart, rather than *vice versa*, as it has been.

LAW NOTES.

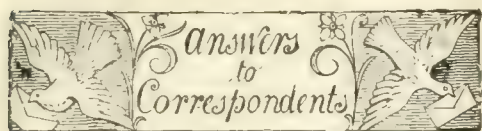
FAILURE.

Re John Hughes, 16, Broadway High Street, Southend-on-Sea, Florist and Nurseryman.

The official receiver for the Chelmsford district has now issued particulars under this failure, from which it appears that the debtor has filed a statement of affairs, showing gross liabilities amounting to £1,560 0s. 11d., of which £1,244 18s. 7d. is due to unsecured creditors. The assets are returned at £212 2s. 5d., from which £58 7s. 1d. is due to preferential creditors, leaving the nett assets at £153 15s. 4d., thus showing a deficiency of £1,091 3s. 3d.

The report and observations of the official receiver are to the following effect: "The debtor, who has been adjudged bankrupt, was formerly a gardener, and about sixteen years ago he commenced business as a nurseryman and florist at Oak Cottage, London Road, Southend-on-Sea. About three years ago last September, he removed to premises at 16, The Broadway, Southend, and also took a lease of land in Leigh Road, which he used as a nursery garden. He states that he had no capital of his own when he started business. The premises at the Broadway are held under a lease, and rent amounting to £121 is now owing. The nursery grounds are also held under a lease, and on December 25 last a year's rent, viz., £40, was owing. The fully secured creditor holds a garnishee order in respect of certain debts due to the debtor. Having regard to the season of the year, and the perishable nature of the stock, it was necessary that a speedy realisation should be effected, and acting on the advice of my agents, I approached the mortgagees of the leases, and obtained from him an offer of £75 for the whole of the stock and effects, with the exception of a horse and two carts. This offer was subject to my paying the rent of the nursery premises up to date. I communicated with the principal creditors, and as no better offer was forthcoming I decided to accept same."

BOTANY AT THE PUBLIC SCHOOLS.—An important conference of the science masters of the great public schools was held at the University of London on January 19, with Sir HENRY ROSCOE in the chair. The subject of Nature knowledge under the name of elementary biology was strongly recommended by the Harrow men as an introduction to science before physics or chemistry is attacked. During the discussion which immediately followed it was evoked that Rugby had in the past taught botany, and that Clifton and Woodbridge were among the schools at which it is now successfully adopted. When the subject of school field-clubs and natural history societies occupied the attention of the meeting, as it did for some time and with considerable effect, botany was again mentioned. Most of such societies, which are becoming very numerous and much appreciated, have botanical sections, which amongst other work have made many very complete lists of local plants, a number of which have been published.



APPLE ORCHARD: *C. S., Swanley.* The soil you intend to plant is, according to your description, not an ideal one for the Apple, it being light and sandy, and the subsoil gravel. If you can put half a cubic yard of loam into the holes before planting, mixing this well with the staple, it would be a means of giving the trees a vigorous start. Mulch the land every summer with farm-yard or stable-dung, and apply manure-water summer and winter. The land is probably deficient in lime and potash, and both of these foods of plants are necessary to success with the Apple, and must be furnished in some form, the former as ground bones, half-inch bones, and superphosphate; the latter as muriate of potash, at the rate of 3 oz per square yard, round about the trees—not everywhere in the first few years. Three dressings of this last-named substance afforded during the spring and summer would suffice for one year. Sheep penned on the land, and fed with cake and Turnips grown elsewhere, would do much in consolidating as well as manuring the land. Various oil cakes may be ploughed in—they afford nitrogen, and decay slowly. If sheep are used, the trees must be protected by having rabbit-proof wire placed round each. If you will inform us for what purpose the Apples are to be planted, early, late, or mid-season, dessert, or culinary varieties, we will give you a short list. The trees ought to be worked on the Paradise stock.

BEGONIA GLOIRE DE LORRAINE: *An Old Subscriber.* After the plants have ceased to bloom, and have been rested for a short time by lessening the quantity of water afforded, and keeping them slightly cooler, cut them down and place in the stove, when in a short space of time suckers will be thrown up. Cuttings of the strongest of these should be taken and struck in small 60's in a steady bottom-heat of 80°. When rooted keep in the stove near the glass without shade, and repot them when necessary. Potting materials may consist of peat and turfy loam in equal proportions, with a good deal of sand. Good drainage is requisite for this and all other species. As the weather gets warmer the plants may be transferred to a heated pit, and in the warmest summer months accorded intermediate-house treatment. The largest sized pot admissible is an 8 inch, but very nice plants may be grown in 4½ and 6-inch pots. The plant will bear liquid-manure once a week whilst growing.

BOOKS: *Aspirant.* Mr. Baker's monograph on *Amaryllidæ* is published by George Bell & Sons, York Street, Covent Garden.—*C. A. A Treatise on Manures*, by A. B. Griffiths. Published by Geo. Bell & Sons, York Street, Covent Garden.

CHINESE PRIMROSE: *Bedford.* What you call black pollen we take to be imperfectly developed and shrivelled anthers with very little pollen in them. Your best way will be to take the pollen from some other flowers, and apply it to the stigmas (pins) of your flower. The abortion of the pollen is common in cross-bred flowers.

CHRYSANTHEMUM: *G. D., Prague.* Dr. Griffiths gives the following as the composition of *Chrysanthemums*, oxide of iron, 3.66; potash, 16.23; soda, 10.39; lime, 26.28; magnesia, 10.22; silica, 5.99; phosphoric acid, 19.52; sulphuric acid, 4.65; chlorine, 3.60; albuminoids, 2.92.

CORRECTION: In my note on "Naming white *Lælia anceps*," p. 81 of the last issue, col. B, penultimate line, for holiday read Hollydayana; and in the sixth line from top of col. C, read "latter as, &c., for is" *J. Hamilton.*

CORRESPONDENCE CLASSES: *Enquirers.* We have communicated with the gentleman you name, but have received no reply.

DAMAGE DONE TO PLANTS, &c., BY A GALE OF WIND: *An Old Subscriber.* Unless you can prove culpable negligence on the part of the owner of the shed, you cannot claim damages from him.

DENDROBIUM PHALENOPSIS PSEUDO-BULES PERFORATED BY INSECT: *W. G. Morgan.* The per-

forations are made by a beetle, *Xyleborus morigerus*. Cut off and burn all such affected parts of the plant, and isolate the latter for a year. Examine other Orchids for traces of the beetle.

DISCOLOURED OAK: *A. D. W.* The green colour is due to the growth of a fungus, *Peziza æruginosa*. Wood so stained, is used by the manufacturers of Tunbridge ware at Tunbridge Wells.

ELM-SHOOTS CHANNELLED: *W. H. C. W.* Not a diseased condition, as you suppose, but the natural appearance of the one-year-old shoots of *Ulmus suberosa*, the corky-barked Elm.

FERN-GROWING: *W. F.* The book you mention is published by J. C. Nimmo, 14, King William Street, Strand. The work is chiefly devoted to Fern-raising, and to the varieties of British Ferns. Mr. Drury's book on choice British Ferns (Upcott Gill, 170, Strand), has a chapter on cultivation, and is less expensive.

GARDENIAS SUDDENLY GOING OFF: *Bure.* We should attribute the death of the plants to their too close proximity to the hot-water pipes, on two sides, which, you tell us, get very hot at times. There was no disease, and no eel-worms on the roots, the plants being to all appearances healthy up to a certain point.

GREENHOUSE VENTILATORS AT THE FRONT: *Aspirant.* Plants kept in a house having ventilation at the top only cannot be so well grown as where there is front ventilation likewise. The latter is very necessary in the summer months; and, on the whole, we prefer the air to be admitted below the staging, and the hot water pipes so arranged that when necessary the air may impinge on the heated pipes on entering the house. The front ventilation needs careful management in cold, bright weather, or the plants will be chilled, and thus enfeebled they fall a prey to aphids. It is generally advisable to reduce the quantity, or entirely shut out front air an hour or thereabouts before finally closing the upper sashes or air openings, and there are early bright days in the spring months when air should not be admitted at the front of a house.

HIPPEASTRUMS AND ORCHIDS: *Aspirant.* The native countries of the first are Chile, Argentine Republic, Southern Brazil, &c.; the last from nearly all parts of South America, except the extreme south.

MONSTERA DELICIOSA FRUIT: *F. L.* The time taken by the fruit in maturing varies with the amount of heat present in the hot-house, and the season; from five to six months is about the usual period.

MUSCATEL AND OTHER RAISINS: *J. M.* Some local varieties of the common Grape-vine.

MUSHROOMS DEFORMED AND DECAYING: *J. K.* An improper kind of soil used for covering the bed is the cause of the trouble. The soil should be loamy, free from manure, and of a binding nature, that will not crumble when Mushrooms are withdrawn from it. That of which you have made use consists chiefly of vegetable mould of some kind, and the Mushrooms not finding in it what they need have perished. We wonder that you have been enabled to gather any Mushrooms at all.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*R. E. G.* 1, *Eurya japonica latifolia variegata*; 2, *Cupressus pisifera variety squarrosa*, one of the *Retinosporas* of gardens; 3, *Euonymus japonicus*; 4, *Arisarum vulgare*.—*G. T.* A species of *Gnaphalium* stained red.—*J. M.* *Ornithogalum lacteum*; Apple shortly.—*A. D. W.* *Glechoma hederacea variegata*.—*Mendeli.* *Lælia anceps Sanderiana*.—*R. W.* 1, *Lælia rubescens*, more often called in gardens, *L. peduncularis* and *L. acuminata*; 2, *Masdevallia polysueta*; 3, *Masdevallia tovarensis*.—*A. S.* 1, *Cupressus (Retinospora) pisifera*; 2, *Cupressus pisifera var. plumosa*; 3, *Euonymus latifolius variegatus*; 4, *Thuja occidentalis*; 5, *Euonymus japonicus medio-aurea*; 6, *Euonymus japonicus*; 7, Portugal Laurel (*Cerasus lusitanica*); 8, *Adiantum hispidulum*; 9, *Adiantum gracillimum*; 10, *Pteris cretica*; 11, *Gleichenia circinata*; 12, *Adiantum tenerum*.—*A. B.* *Gnaphalium leontopodium*, "Edel-

weiss." We are ignorant of the botanical name of the plant, which is called "Satin-flower" by Australians.—*A. B.* *Stachys tuberifera* (Chinese Artichoke, or Crosnes). Its cultivation is very easy. Plant the tubers 2 inches below the surface of the land, at 1 foot apart; keep clean by hand-weeding or hoeing, and apply water in very dry weather, so as to avert a too early stoppage of growth. The plant is quite hardy, and the tubers may be left in the ground till wanted for use.—*Caldecot House Gardens.* *Agaricus (Clitocybe) nebularis*, which can bear a great deal of frost, and is edible.—*E. M. C., Kingstown.* *Odontoglossum Lindleyanum*.—*W. H. E.* The shrubs are not in flower, and we cannot name them with absolute certainty. 1, *Photinia serrulata*; 2, *Pittosporum undulatum*; 3, *Corynocarpus laevigatus*; 4, *Adiantum hispidulum tenellum*; 5, *A. cuneatum elegans*; 6, *A. exicium*.—*W. L., Tyrone.* 4, *Begonia fagifolia*, often called *B. scandens*.

ROSES GROWING IN SOIL MIXED WITH ONE HALF OF ITS BULK OF MANURE: *Chicot.* With such a mixture, no Rose would remain in good health, as the mixture would soon get impervious to air and become sour, the more especially if much compacted at the potting. A heavy loam mixed with a sufficient quantity of coarse sand, to permit the water to pass through it, and decayed stable and pig's dung, equal to one-sixth of the whole, would suit the requirements of most Roses. There must be good drainage, clean but not over large pots, and very firm potting.

TRADE GLASSHOUSE RATING: *Tugela.* According to the provisions of the Agricultural Rates Act (1896), land used for agricultural purposes is rated to only half the amount demanded from land with "buildings" on it. Glasshouses, though not utilised for residential purposes, are, none the less, buildings. Agricultural land, as now decided, must have no buildings upon it. Market gardens, orchards, nursery grounds, allotments, are considered to be agricultural land; the difficulty of distinction becomes more apparent, for most nurseries, even if they have no greenhouses, contain an office, tool-shed, frames, &c., and other "buildings" used for purposes of business only. The Court of Quarter Sessions said one thing, the judges of the Divisional Court were divided in opinion. The Appeal Court, presided over by the Master of the Rolls, upheld the distinction between "land" and "buildings," and later (see *Gardeners' Chronicle*, August 12, 1899, p. 130), the Lord Chancellor, together with Lords Watson, Macnaghten, and Morris, finally agreed with the judgment of the Master of the Rolls. We are unable to say whether you are too highly rated; the rating authorities fix the value of the houses to the owner or tenant, and the amount of rate leviable. You can appeal against the amount of the rate, but appealing does not always lead to a reduction.

TROPICAL FRUITS FOR A GREENHOUSE: *Aspirant.* *Tacsonia manicata*, *Passiflora edulis*, Oranges, Shaddock, Citrons, Persimmon or Kaki, Loquat, *Eugenia Ugni*, and, against a warm back wall in a house facing south, *Psidium Cattleianum* (Guava).

TULIPS FLOWERING PREMATURELY: *W. L. B.* Without having inspected the bulbs, and being ignorant of the details of management, we are unable to advise you.

VANILLA: *F. L.* When the "pods" become scented, it is time to remove them from the plant. They may be stored in a dry closet, after being separately wrapped in tissue paper. The pods should not be stored till dried, or mildew may attack them.

COMMUNICATIONS RECEIVED.—*W. L., Tyrone*—*W. H. E.*—*E. M. C.*—*Curieux*—*H. B. Bell*, too late for insertion.—*Frances G. Heath*—*W. R.*—*G. H. H.*—*J. T. P.*—*W. Bradbrook*—*W. O.*—*E. C.*—*W. A. R.*, Sleaford—*F. B.*—*C. C. H.*—*A. F. P.*—*F. Q. C.*—*J. B.*—*J. K. A.*—*T. R.*—*S. A.*—*W. Crump*—*Harrison Weir*—*C. P. J.*—*C. W. Simmons*—*Taunton Deane Hort.*—*Hort. Soc. of Southampton*—*Roy. Cal. Hort. Soc.*—*W. H. H.*—*J. H.*—*H. W.*—*J. C.*—*W. & S.*—*H. Kempshall*—*F. Wellstead*—*E. Ballard*—*H. P.*—*J. L.*—*A. W.*—*J. R. P. & Sons.*—*A. C. F.*—*H. W.*, Eastwell.—*J. C.*—*A. M.*—*J. H.*, Haarlem.—*A. D.*—*A. H. S.*—*F. E.*—*S. W. F.*—*F. G. H.*—*W. Siehe.*

(For Markets and Weather, see p. xiv.)



RHUS COTINUS, WIG TREE. RIBSTON HALL, WETHERBY (MAJOR J. W. DENT).



THE

Gardeners' Chronicle

No. 738.—SATURDAY, FEB. 16, 1901.

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CLIMATE AND TIMBER CULTURE.

IT surprises me to find how prevalent the belief is that the light crops of timber of bad quality in this country, as compared with continental crops, arise from some unexplained cause in our soil or climate. I would not be so much surprised to find that notion upheld by those who have committed themselves to a wrong system of culture, and feel obliged to stand by it through thick and thin, as some foresters have done; but one does not expect to find such absurd opinions among owners of estates who have often travelled in the timbered regions of the continent, and should know better. The opinion is quite common that the climate of the British Islands is the cause of our inferior timber, and that nowhere else in Europe do forests suffer from gales as they do here. Not long since, the owner of large estates told me that he had been assured by an estate agent of large experience that it was no use attempting to grow timber on the continental system for the reasons stated, and this with examples growing within sight of his own door that contradicted him flatly.

The fact of the matter is, that those who assert such things repeat a mere parrot-cry, and do not know what the real difference is between home-grown and continental timber,

nor the cause of that difference, and a few questions pressed home on this head, I invariably find, make that much clear. Generally speaking, the soil of central and north Germany is in the same latitude as the British Islands, and further north the land does not differ from that of this country so far as the wants of trees are concerned, and these wants are very few; and as regards climate Britain has the advantage, if anything, because we can grow a greater number of kinds of trees than can be grown in Germany or the north of France, and those species that do grow in these countries we can also grow as well or better. These are Oak, Beech, Spruce, Scotch Fir, and Larch, &c. When M. Boppe, the French Forestry delegate, visited some British forests some years ago, he admitted that we could not be surpassed as tree-growers, and said we had the climate for it, but that British foresters were not timber-growers through causes perfectly under their control, and he cited Scone and other estates.

The difference between home-grown and foreign timber is easily explained, and the conditions which account for the superiority of the latter are applicable wherever trees will grow. The timber trees that come from abroad are tall and clean, free from knots, and taper very slightly, so that planks or deals of great length and of uniform breadth can be cut from them. Climate and soil have nothing to do with these qualities, which are entirely due to the fact that the trees are grown in such a way as to induce clean stem growth instead of side or branch growth. The distance between the trees is gradually regulated so as to produce trunks of the required girth, whether pit props or railway sleepers, but so as to preserve sufficient density of shade to cause the trees to shed their lower branches early, hence the knots left are small and soon grown over. The timber trees of this country owe their short trunks, in the case of hardwoods, excessive taper in the case of Firs, and general roughness, to their having too much room in which to grow: they keep their branches almost as long as they live like specimens in an arboretum or a garden, which cannot be called timber trees in the strict sense of the word.

Those who keep their eyes open may see, on almost any estate, accidental examples of model timber-trees equal to anything to be found on the continent, and such trees are always to be found under conditions that can be repeated with the same results with every species of forest-tree, but which our foresters have still to learn how to apply. Knowing these things, one has not much patience with those who talk and offer advice on a subject which they clearly know nothing whatever about. The conditions that produce timber of the very best quality, exist on every wooded estate in Great Britain, and only need application.

Planters have, in the past, been much misled by the descriptions given of our forest-trees, which invariably apply to park examples, whereas it is as forest examples that we need to know them. Look at the description of the Scots Fir in Veitch's *Manual of Coniferae* for example. *Pinus sylvestris horizontalis* is there described as "the most valued as a timber-tree," whereas, if there be such a variety at all, which I doubt, it should be avoided, because as Veitch says, "it is distinguished by the horizontal direction of its branches." Given a wood of Scots Fir timber, of trees of the above shape to value, and you may discount it by twenty per cent. at least, before seeing it. But in the Scots Fir forests of Scotland, and elsewhere, for every horizontal example there are thousands of trees

not one of which, of mature age, resembles *horizontalis*, the general type of tree having a tall clean stem with a "bonnet," and sometimes a pyramidal head. I would not recommend a horizontally branching variety of any Fir for planting for timber on any consideration, however superior the quality of the timber might be. The varieties of Scots Fir are numerous, and often very marked in even young plantations where the difference in habit is easily detected. Some trees are dwarf, comparatively, of bushy, dense habit, with short needles, while some are thin, and make much longer annual leaders—finer trees altogether, growing nearly as fast as the Corsican, which almost invariably tops the Scots Fir under equal conditions. There are numerous examples of Scots Fir growing here and there in the open in the Dukeries (Notts), that answer exactly to the *horizontalis* description, having long horizontal limbs not far from the ground—fine trees in their way, but of the unsaleable type as timber trees. I have always attributed their shape to their being afforded too much space. At Beaulieu, in the New Forest, there is a patch of Scots Fir, apparently of the same variety, but the trees having been let alone to grow up close together, they are now 130 feet high, and as straight and clean as well-grown Larch, branchless to their small tops, where, however, the branches assume the horizontal form. These trees were planted by John, Duke of Montagu, and their shape is due entirely to the crowding, the climate having had nothing to do with it. They were there, a good object-lesson in close planting, when those in charge of that day were hewing and thinning elsewhere in the forest and securing less than half a crop of inferior timber.

I remember once, when in the grounds at Dunkeld with the late worthy Mr. Fairgrieve, the gardener there, seeing a dense group of tall Scots Fir with "bonnet tops," and Mr. Fairgrieve telling me how enthusiastic a well-known member of a certain arboricultural society had got over them because he thought he had discovered an entire batch of the true bonnet-headed variety—*horizontalis*, I suppose; whereas, as Mr. Fairgrieve said, they had only got their bonnets on "after they had got their heads out of the light."

With regard to the winter climate of the British Islands, I believe it is more favourable to forest trees than that of central and north Germany. We do not hear of such extensive ravages by insects and diseases in this country as occur there, and some trees live and thrive with us that cannot endure the winter of Germany or the north of France. The *Araucaria* and some other members of *Coniferae* perish, and I am told that neither the English Yew nor the Holly are quite hardy in Germany. One certainly sees but few of either there, in gardens or woods. There is not the variety of evergreens in Germany that we have. In the eastern States of America the Holly is, I believe, a pot-plant, and thousands of big plants are sent to New York for decorative purposes from this country. In the severe winter of 1894-5, numbers of Yews and Hollies were severely injured, and had to be cut back to the sound wood.

To sum up, I venture to say that no one should believe in the climate bogey about growing timber in this country. The shape, size, and quality of timber trees, for all practical purposes, are matters under the control of the forester. There is a revival of interest in forestry in this country at the present time, and

the subject is very frequently discussed among owners of woods, with whom the climate difficulty is, however, often raised as an objection to their trying to improve their woods by a change of system. I have been told this over and over again by owners; and once I was asked what arguments I would suggest to controvert such opinions, and my reply was, "question those who entertain them closely as to the precise differences between the two climates in relation to timber, its shape, size, and quality, and you will find, as a rule, that they cannot give you any explanation of their opinions, which are usually derived, unquestioningly, from other people as ignorant as themselves. J. Simpson.

NEW OR NOTEWORTHY PLANTS.

COLCHICUM HYDROPHILUM.

A VERY beautiful plant; it belongs to the species in which the flowers and leaves unfold at the same time, that is, in early spring. The plants thrive only in such places as are copiously watered, and especially in spots that, during the spring are flooded with running water from the melting of the snow. From July to October these places must be kept dry.

The bulb attains to the size of a walnut; it is chestnut-brown in colour, and is surrounded by a dark brown skin. The leaves and flowers appear together. The flowers are of a bright, clear rose, and are taller than the leaves. The latter grow after the flowering, and attain a length of 6 inches and a width of nearly 2 inches. They are bright green, narrow at the base, whence they gradually, and with slight curves, diminish to a point.

The flowers are set in clusters of from three to fifteen. The stamens are half as long as the segments, the filaments are thickened in the middle, the style is as long as the stigmas. The capsule is 3-partite, the seeds are round and light brown in colour. The plant most nearly resembles *Colchicum fasciculare*. It is found in the Taurus mountains, both in the north and south, never at a lower elevation than 3,250 feet, while in the Alpine districts it reaches a height of 6,500 feet (fig. 43).

HYACINTHUS LINEATUS [= *BELLEVALIA* HELDREICH].

A very beautiful spring-flowering plant, first discovered by Heldreich, near Adalia, and propagated by myself in my garden in the Cilician Taurus as a variety having stalked flowers (fig. 44, p. 103).

The plant grows at an elevation of 3,250 feet above the sea in chalky places. Such spots as are covered with thousands of its blue flowers present a very beautiful appearance. W. Siehe, *Mersina*.

DENDROBIUM × *WIGANIANUM* (HILDEBRANDI × NOBILE).

A three-flowered panicle of this graceful novelty is sent by Mr. W. H. Young, orchid-grower at Clare Lawn, East Sheen, who remarks of it: "The cross was made on April 30, 1896, and the seed came up during the following year on the Thunia pots, where it had been sown. The growths are fairly intermediate between the two parents." The flowers are well displayed on long pedicels, and in the size and shape of their sepals and petals they resemble *D. nobile*; but the more trumpet-shaped lip, suggestive of *D. tortile*, partakes of *D. Hildebrandi*, though its substance, like that of the rest of the flower, is thicker. The sepals are white, and tinged with rose colour on the outer halves on both sides, the lateral ones twisted; the broader petals are white, more heavily tipped on both sides with purplish-rose; the lip is of a chrome-yellow tint in the centre, with a few red-brown markings on each side, forming the only indication of the dark-coloured disc of *D. nobile*; the front of the lip is expanded, and of a creamy-white. It forms a fitting companion to *D. × Wiganiae* (nobile × signatum). James O'Brien.

ORCHID NOTES AND GLEANINGS.

CYPRIPEDIUM × SALLIERI AUREUM.

SOME fine examples of the original type of *Cypripedium* × *Sallieri* are flowering in the collection of Captain Holford, Westonbirt, Gloucestershire (gr., Mr. A. Chapman), who kindly sends flowers of them. It originally appeared in the gardens of Madame Fould, near St. Germain, about fifteen years ago, when Mr. Sallier was Madame's gardener there. It was supposed to be an imported natural hybrid, between *C. villosum* and *C. insigne*, and that theory has been supported by its appearing among plants of *C. insigne* which have been imported from Burmah; and the parentage is verified by plants raised in this country. In some gardens it is regarded as a variety as *C. × nitens*, though it is very different as a garden plant from the original *C. × nitens* raised by Messrs. Jas. Veitch & Sons, between *C. villosum* and *C. insigne* Maulei. The flowers which

the manner of *C. Argus*. Upper sepal white, tinged with rose, and with numerous green lines; petals greenish, tinged with rose on the outer half, and spotted with chocolate-purple, hairy at the edge; lip greenish, tinged with dull rose on the face.

Both the above plants are in the collection of Reginald Young, Esq., Linnet Lane, Sefton Park, Liverpool (gr., Mr. Poyntz). J. O'B.

"LINDENIA."

The plants figured in the last number are:—

CATTLEYA × *LANDSBERGERI* (Lucen Linden).—A hybrid between *Cattleya labata* and *C. Dowiana aurea*. The segments are rosy-lilac, the lip broadly expanded, whitish, with a large yellow-rayed blotch in the throat, and in front a broad rosy-purple spot; the margin crenulated, and whitish tail; tab. DCCXXV.

CHYSIS LEVIS (Lindley, *Bot. Reg.*, xxvi., misc., p. 61).—Flowers stellate, segments spreading, oblong, acute, orange-flushed with red; basal lobes of lip encircling the column; anterior lobe, oblong, dentate, yellow, with red spots, and with five ridges at the base; tab. DCCXXVI.



FIG. 43.—*COLCHICUM HYDROPHILUM*. REDUCED.

Mr. Chapman sends seem to be larger in size, and thicker in substance, than those of *C. villosum*, to which, however, the variety aureum closely approaches in shape. The flowers are yellow, with a slight green shade in it, and the surface of the flower is very glossy. The margin and apex of the dorsal sepal are white, the basal portion marked with dark brownish-purple, the same tint suffusing the upper halves of the petals. The other variety sent has the dorsal sepal more like that of *C. insigne* in form, and it bears a few rose-purple spots upon the white upper part of the dorsal sepal. The plants from which the flowers came must have been well cultivated, or these would not have been so massive.

LELIO-CATTLEYA × *MARICA* (L. CINNABARINA × C. AMETHYSTOGLOSSA).

With the narrow segments each about 1½ inch long peculiar to most *L. cinnabarina* crosses, the winter-flowering habit of this hybrid makes it acceptable. Sepals and petals equal, rosy-lilac; lip narrow, three-lobed, the basal half white, the tips of the side-lobes and the front-lobe rose-purple.

CYPRIPEDIUM × *IPHIS* (TONSUM ♀, ARGUS ♂).

Formed much like *C. tonsum*, but with rather broad petals, spotted with chocolate-purple, after

CYPRIPEDIUM × *LANDSBERGERI* (L. Linden).—A hybrid *C. bellatulum* and *C. Boxalli*. Standard, roundish-flat, white, richly coloured with vinous purple petals, broad at the base, contracted near the apex; lip cylindrical, tubular, deeply coloured; leaves intermediate between those of the parent species; tab. DCCXXVII.

SCHOMBURGKIA HUMBOLDTI (Reichenbach fl., in *Xenia Orchidacear.*, i., 240).—Pseudo-bulbs conic, cylindric; flowers numerous, in erect rac. each flower about 3½ inches in the longer diameter; segments spreading, oblong, lanceolate, the inner ones oblong, obovate, white, flushed with pink; basal lobes of lip wrapping round the column; anterior lobe roundish, emarginate, rosy-violet. Native of Venezuela. A rare and little known species, but withal very attractive; tab. DCCXXVIII.

THE PAST CENTURY.

(Concluded from p. 18.)

AURICULAS.—The Auricula holds its own; and such raisers as Lightbody, Headly, Traill, Douglas, Simonite, Woodhead, Horner, and others, have added during the last sixty years many fine varieties to the show section. The alpine varieties are the product of the last half of the century; Turner, Douglas, Phillips, and others, have assisted in their improvement with the best results. Its nearly, the Gold-laced Polyanthus, is, so far as choice named sorts are concerned, almost lost to cultivation, owing to the difficulty experienced in culti-

vating the choice varieties. The *ANTIRRHINUM* is still a popular flower, especially in the north, where the practice of naming varieties is still followed; and choice strains are generally of very fine quality. The *Anemone* has ceased to be regarded as a florists' flower, despite its attractive vernal beauty.

The close of the century saw the *DAHLIA* also very popular. A series of coloured illustrations, dating back over seventy years, enables one to realise something of the gradual changes which converted a single flower into a double one. The large show and fancy varieties are still widely cultivated, especially for exhibition purposes; and the Pompon varieties have been greatly extended and improved during the last thirty years. About thirty years ago, the single flowered type came to the fore,

varieties then cultivated. Of late years the disease, having become less virulent, attempts are being made to restore the *Hollyhock* to something of its old position in the estimation of florists. The single flowered varieties are also receiving attention as border plants, but their value as decorative agents is in danger of being over-estimated.

The old show *PANSIES*, the selfs and white and yellow grounds, are now grown but little in the south, though they find favour in the north. The Fancy Pansy, originated by John Salter, and so much improved by M. Milliez nearly fifty years ago, with their larger, richly-coloured blossoms and more vigorous growth, are much preferred, and occupy a prominent place in many gardens. Fifty years ago Pansy shows were numerous; now the

market plants; but the show and fancy *Pelargoniums*, once cultivated into fine and imposing specimens for exhibition purposes, are now very rarely seen in this form. The zonal type holds its own as a bedding plant for summer, and as a house decorative plant in the season, and especially for flowering under glass in autumn and winter. The name of Pearson is prominently associated with the improvement of the zonal type for over thirty years; much of the refinement seen in the present day is due to the good work done at the Chilwell Nurseries. From other home sources, and also from abroad, have come many new and novel varieties; and this activity goes to emphasise the fact that the zonal *Pelargonium* has lost none of its old popularity.

With the decline of the riband style of flower gardening came also a lessening of interest in the variegated and bronze-zoned types, and it is certain they have materially declined in cultivation. New varieties are now very rare indeed. The Ivy-leaved type and its offspring still enjoy a good deal of popularity, because of their usefulness as decorative plants. The scented-leaved species and their varieties are still cared for in places, but it cannot be said they are at present popular plants.

The *TREE PÆONIES* (*P. Moutan*), which came from China in 1789, are also a product of the present century, and the varieties have greatly increased during the past few years, both at home and abroad. Like the *Chrysanthemum*, it is a favourite flower with the Chinese and Japanese gardeners. The remote progenitors of the herbaceous type, *P. albiflora* and *P. officinalis*, have been in English gardens for over three hundred years, but it is only during the last half of the nineteenth century that there has been activity in the production of new varieties, and these appear every year in apparently increasing quantities. Whether grown under glass or in the open, the flowers, which in the case of many varieties are fully double, are also surprisingly fine.

The *PENTSTEMON* is a very popular garden plant; one of its most valuable characteristics is that of blooming to quite late in the year. *P. Cobaea* and *P. Hartwegi*, from which the present fine varieties found in cultivation are believed to have sprung, were introduced since 1820, and thus the development of the flower belongs to the century just closed. An introduction from Mexico, under the name of *P. gentianoides*, was popular in gardens over fifty years ago, and this no doubt proved to be another valuable parent. Our present-day strains of *Pentstemons* are now remarkable for the great size and rich colours of the flowers, so much so, that naming is but little resorted to except in Scotland.

The finely-formed, striped *PETUNIAS*, which ranked as florists' flowers thirty and forty years ago, have largely disappeared, and in their place we have very large blooms of gaudy colours, but showing a great lack of shape and substance. There was no *Petunia* in cultivation in this country during the first twenty years of the nineteenth century, but when *P. violacea* and *P. nyctaginiflora* were introduced, material was supplied from which flowers of high quality and beautifully striped characters were derived. We look back with something like regret upon the named varieties of *Petunias* of thirty and forty years ago. There are a great many double varieties also, and some of them make very useful decorative and market plants. The *Petunia* serves so many useful purposes that it is likely to retain its place in gardens for many years to come.

Both *PHLOX decussata* and *P. suffruticosa* were in English gardens at the beginning of the century, and it would appear that the earliest work of improvement was done by continental florists, and in the volume of the *Florist*, for 1848, there is an illustration of two varieties of *P. suffruticosa* obtained from abroad. By comparing these with the newer forms of the last two or three years, we are able to perceive what a great advance has been made with this popular herbaceous perennial. The



FIG. 44.—*HYACINTHUS LINEATUS* [= *HELLEVALIA HELDREICHII*]. $\frac{1}{2}$ NAT. SIZE.
(SEE P. 102.)

and numberless new varieties were obtained; they were very popular for a few years, but of late have much declined in the popular estimation. In 1880, *Dahlia Juarezi*—the Cactus Dahlia—was introduced, and its progeny now form the most popular of all the sections. From the crimson flower first introduced there have come a large number of varieties of many shades and combinations of colours, all retaining the Cactus form of the original introduction, and indeed, showing improvements upon it. While the flowers have undergone great improvements, there are yet material defects of habit in many of the newer introductions.

The *HOLLYHOCK*, of which there were about nine varieties, mainly double, in 1820, was improved by Charles Baron sixty years ago, and later by Paul, Chater, Bircham, Parsons, Rooke, and others, until it had attained to great pre-eminence as an exhibition flower. Then about forty years ago came the outbreak of a fungus disease, which decimated collections and caused the total loss of not a few of the finest

flower does not often find a place in schedules of prizes. The *VIOLA*, an outcome of the last half of the century, is now represented by a multitude of varieties, to which additions are being made annually, many of them, it is feared, of inferior character. They are esteemed for flower garden purposes, and in our London parks some of the varieties are seen to great advantage. Unfortunately, comparatively few of the named varieties appear capable of enduring the heat and drought of our recent summers.

The show and Fancy *PELARGONIUMS*, which fifty years ago, Beck, Hoyle, Foster, Gaines, Dobson, Foquette, Ambrose, and others; did so much to improve, and Turner later in point of time, have ceased to be regarded with so much favour as greenhouse decorative plants as formerly; and yet they are not difficult to cultivate, and they are singularly showy when in bloom. A section known as large-flowered decorative varieties supply several which are largely grown as

flowers are now very large, finely rounded, and of massive substance; and their popularity as border plants is great and widespread.

It would require a large volume to do justice to the ROSE. There was in cultivation at the commencement of the century a very large group of what might be termed garden Roses; but we can scarcely be said to have any hybrid perpetual varieties until after 1830, and from 1850 they were improved with remarkable success. The race of Tea scented Roses may be said to have begun about much the same time. The hybrid Teas began with Cheshunt Hybrid, La France, and Captain Christy, some thirty or so years ago; and Bennett did much to improve the race, assisted by continental raisers. Not a few interesting forms of Roses have been introduced from Japan and elsewhere, such as *R. polyantha*, *Rosa rugosa*, and its allies, &c. Garden Roses are now highly popular, on account of the variety of form and colour, and wealth of bloom found in the section. The Banksian and Moss Roses have lost much of their old popularity, but the China Roses still rank high as autumn bloomers. As an exhibition subject, the Rose is as popular as ever; but the giant specimen plants which were grown and exhibited a quarter of a century ago appear to have entirely disappeared. In a modern Rose garden can now be found a considerable proportion of those denominated garden Roses.

The VERBENA, once such a popular florists' flower, is no longer regarded as such. All the improvements made in it belong to the century just closed, and beyond finding a place in the flower garden, the Verbena has ceased to specially interest the florist, while named varieties have almost ceased to exist. *R. Dean*.

THE BULB GARDEN.

CROCUS SIEBERI.

THIS pretty Crocus is associated in my mind with a remark I read about it before I saw the plant, many years ago. It was described as:—"This hardy little mountaineer, anticipating all others." The latter part of the quotation is not strictly true, as we have a few other Crocuses which flower even earlier than the dainty little flower from Greece and adjacent parts. It is, however, I believe, a true mountain subject. In Dumfries it flowers usually in the month of February, should the winter be an open one, but on its native heights it sometimes blooms as late as the month of May. As this is written, early in January, only one flower is open, and it is that of a variety named *C. s. purpureus*, which is not unlikely to have had its flowering hastened by being dried off before it came to me in the autumn. The typical plant and the variety *C. s. versicolor* are not likely to flower before the end of the month.

The type, with its lilac flowers, is very pretty, and the form called *purpureus*, just alluded to, is pleasing as a deeper coloured variety, but neither can compare in beauty with the form of the variety named *versicolor*, which I have the good fortune to possess. The flower is feathered with white and purple in a way one cannot venture to describe. It is, however, only one form out of many, and that liking for these flowers which leads one to admire this plant impels me to wish for others of this variable form. It is said to come from Crete and the Cyclades, while the type comes from the mainland of Greece, the Morea, and adjacent districts. It is a pity that by some joint effort on the part of admirers of Crocus we cannot obtain from its native habitats a large stock of the plant in its many varieties.

Crocus Sieberi is one of the species which produces its leaves with the flowers. It belongs to the nudiflorus group, which are destitute of a basal spathe. Its reticulated corm-tunic causes it to be included among the reticulatus group, but a distinguishing feature is the radiating mass of unbranched fibres which forms the basal tunic. It is

rarely met with under any but Gay's name of *C. Sieberi*, although it is the *C. nivalis* of Bory and Chaub., the *C. thessalus* of Boissier and Spruner, and Herbert's *C. sublimis*; it was also called *C. Sieberianus* by Gay. *S. Arnott, Carsethorn-by-Dumfries, N.B.*

IRIS PARADOXA (STEVEN), VAR. CHOSCHAB.

IN volume v. of the *Mémoires de la Société Impériale des Naturalistes de Moscou*, p. 355, 1817, the Russian botanist Steven described the quaint *Iris paradoxa*, and he says that it came from the sunny hills of ancient Iberia, which as one knows lies south-east of the Caucasus. Koch, who cites it in vol. xxi. of *Linnaea*, gives the hills near Elisabethpol, in the same country, as a locality for it. According to Boissier, it has been found in the district Talyach (south-eastern Transcaspia), in Russian Armenia, and in the Persian province



FIG. 45.—IRIS PARADOXA (STEVEN), VAR. CHOSCHAB

Aderleidsjan. All the published descriptions by the various authors, including the very interesting article of Siemssen on this and other *Oncocyclus* Irises, in the *Botanische Zeitung*, 1846, p. 707, as well as all the coloured plates and engravings which have been published of it (see *Gartenflora*, tab. 386; the *Garden*, vol. xxxii, p. 584; and *Bot. Mag.*, tab. 7081), represent this *Iris* as having the standards coloured purple-violet.

I therefore feel justified in giving a varietal name to a charming variety of this *Iris* (fig. 45), which Messrs. Van Tubergen of Haarlem, Holland, were lucky enough to obtain from the collector they sent out in 1899 to the botanically almost unexplored region which stretches between the East Armenian town of Van and the lake of Urmiah in North-western Persia. This variety of the originally described violet-coloured *Iris paradoxa*, was found growing wild near the small village of Choschab at a considerable height, and although agreeing in every botanical detail with the type, for garden purposes it is abundantly distinct by its milky-white interior petals (the standards), which are delicately though very distinctly veined lilac.

It occurs in a region where the winters are long and severe, and as far as the short time it has been in cultivation will enable me to judge, it seems to be more amenable to culture in our climate than such Palestine *Oncocyclus* Irises as *Marie*, *atrofusca*, and others, which probably can never be expected to become really established in our gardens. *John Hoog, Haarlem, Holland.*

IRIS SINDPERS (*I. SINDJARENSIS* × *I. PERSICA*).

The subject of the accompanying engraving, *Iris Sindpers*, is, in all probability, the first hybrid that has ever been raised in the *Junogroup* of bulbous Irises (fig. 46, p. 105). Following Sir Michael Foster's method of naming hybrids by combining the two first parts of the names of each of the parents, it is obvious that this new *Iris* is the result of a cross between *Iris sindjarensis* and the well-known *I. persica*, the former being the seed bearer. When comparing the habit of this hybrid with that of its parents, one might be inclined to call it a dwarf form of *I. sindjarensis*, wherein the parentage of *Iris persica* can also be distinctly traced. The leaves have become short and stiff, and they are of a deep green colour. The flowers are produced in the same way as with *I. sindjarensis*—that is to say, from the axils of the leaves; but as the plant grows much more compact, it seems as if they all came from the centre of the plant only. Out of many seedlings, all alike in habit, but with flowers of differing shades, the best and largest flowered variety was, of course, selected for growing on; also the one that was the most floriferous. The variety here figured, which was considered to be the finest, has flowers the size of those of *sindjarensis*, of a delicate pearly-blue; the falls are striped with veins of a deeper blue, and they are tinged black at the tips, which points to the characteristic velvety black blotch which is to be found in the flowers of *Iris persica*. What makes the flowers particularly attractive is a conspicuous deep orange crest running down the middle of each fall. Another feature of *Iris sindpers* is its remarkable floriferousness, the plant here figured being the growth of a single bulb, which bore nine flowers in succession, five of which were open at the same time. From *I. sindjarensis* it has inherited the vigorous growth, and it fortunately increases so rapidly that one full-sized bulb will in a single season throw off from three to five large offsets, which generally grow into flowering shrubs in one year. This charming hybrid *Iris* was raised in Messrs. Van Tubergen's nursery, Haarlem, Holland, and it was first noticed in these columns by Prof. Sir M. Foster (vol. i., 1899, p. 225), who at the same time described another hybrid of the same raisers (*Iris persica purpurea* × *I. persica*), and to which I hope to be able to refer later on. *John Hoog, Haarlem, Holland.*

MARKET GARDENING.

PREPARING THE HOUSES FOR CUCUMBERS AND RAISING THE PLANTS.

If not already done, no time should be lost in preparing forcing houses for the reception of Cucumber plants. The gross results obtained from these plants five months hence will compare favourably with those secured from plants set out a month earlier, six months from the time of planting, the extra amount of coal required to maintain a good growing temperature during the winter months, counterbalancing the higher prices which the produce of the earlier planting would realise in the month of March. The first step to be taken in the preparation of the forcing-houses is to have the soil in which the Cucumber plants were grown last year wheeled out, being careful to remove every particle of the compost, brushing off any soil adhering to the brickwork with a stiffish besom, together with any loose soil on the floor of the individual houses, and wheel the same out to the waste soil heap. In this way woodlice and other undesirable pests may be got rid of, the washing of the brickwork afterwards

with liquid-lime being also a step in the right direction (the woodwork and glass having been previously washed), as plants, like animals, do best in a sweet, healthy atmosphere.

As a rooting and sustaining compost, a light loamy soil and peat manure in equal parts, is everything that could be desired in this direction. However, the Cucumber plant is not particular as to whether soil is loamy or not, so long as it is fairly light and rich. The soil and manure having been well mixed, that is, turned over at least once, and left in a heap for a few days before taking it into the houses to form the ridges on which to set the plants, will heat to such an extent as to destroy all insect and vegetable life in the heap, to the ultimate benefit of the plants for which it is prepared. About four barrowfuls of the mixture to each 9 feet length of hotwater-pipe (single line of pipes) will be enough to form the ridges in the first instance; afterwards top-dressing at intervals of about three weeks as the roots push through the soil, burying the stems of the plants between 1 and 2 inches in the top-dressing; the plants being in the first instance planted on the levelled surface.

where only a few hundred plants are required, to plant three or four houses from 100 to 200 feet long each, and there is no small separately-heated house available in which to raise the desired number of plants, it will be much cheaper to purchase the plants as near home as possible, than to burn a truck-load of coke or coal in maintaining the degree of heat necessary to raise the young plants in, perhaps, an otherwise empty house. If the floor of the said house is occupied with Seakale, Rhubarb, Asparagus, boxes of Mint, French Beans, and such like, well and good. All the same, it is better to have plants from a house devoted exclusively to the raising and growing-on of young Cucumber-plants in 48 or 32-size pots, and to transfer them to the ridges direct. Plants thus grown are brought pretty close to the roof-glass when planted on the ridges, and therefore make more rapid and satisfactory growth, than would have been secured by setting the same plants on the ridges directly out of the 3-inch pots in the first instance. When the plants have reached the third or fourth wire from the bottom, pinch out the points, and stop the laterals or side shoots at the third joint. After this

two, to send to market, they will help to pay the carriage of a few dozen flats of "specials," "bests," and second-best "cues." The object being, while taking all that a Cucumber-plant is capable of producing under generous and skilful treatment, not to unduly and unprofitably exhaust the strength of the plants. A well-conditioned plant under the best possible treatment is only capable of yielding so much produce. And when this point is reached, the plants—notwithstanding their good record—must be removed to the rubbish-heap to make room for a fresh batch of young Cucumber or Tomato-plants. When the Cucumber-plants are in full bearing, the top-dressings may consist exclusively of short, well-sweetened stable-manure—that is, manure from which all rank steam has passed away before being taken into the forcing-house; otherwise much harm to the young fruits and leaves would probably result from contact with the steam arising from the manure, combined with sunshine. Hence my sounding this note of warning.

I have known a case of several long houses of Cucumbers being spoiled through laying on an unduly heavy mulch of insufficiently decomposed and sweetened stable-manure on the ridges, when the high, moist, and, I might say, close atmosphere is heated afresh; and although the top ventilators were open a little all night, the mischief complained of was done through the vapour coming in contact with the fruits and foliage in its passage upwards through the slightly opened ventilators; strong summer sunshine the following day completed the havoc already wrought by the fermenting manure underneath the plants. The want of forethought meant a loss of two or three hundred pounds to the owner of the houses in question; but, fortunately for him, he was able to bear the loss comfortably enough.

Rochford's Market Cucumber is the best of all varieties for market work, and it is, therefore, cultivated almost exclusively for this purpose.

TOMATOS.

Seeds of Comet, Chemin, or other good all-round Tomatos, should be sown thinly in boxes without further delay, in order to raise plants for planting in houses early in March. Cover the seed lightly with fine soil, and press this with a piece of board, to make the seeds and soil firm. As soon as the seedlings are up, place the boxes in a position near to the roof-glass, in order to ensure sturdy growth in the young plants. Pot-off singly into 3-inch pots as soon as large enough to handle. Stand the pots closely together on an improvised stage near to the roof-glass, and apply water, repeating the application through a spray-distributor at short intervals, so as to maintain the soil about the roots in an uniformly moist condition. *H. W. Ward, Rayleigh, January 12.*

FRUIT REGISTER.

LATE DESSERT PEARS.

At the meeting of the Royal Horticultural Society, held early in January last, a small collection of late dessert Pears was shown by Messrs. Veitch, of the Royal Exotic Nursery, Chelsea. The term late was only to be taken relatively, for some varieties were fully ripe, although in fruit catalogues their season is stated to be February—May. It will thus be seen that in the south we cannot always keep these varieties to so late a date. The exhibit, all the same, was of so much interest to gardeners, that an award would not have been out of place. Some of the varieties cannot be relied upon in the usual run of seasons, but that of last year was favourable for the ripening of these. There could be no question as to the merit of Josephine de Malines, a dish of which was awarded a First-class Certificate. Some readers of the *Gardeners' Chronicle* may ask in vain why this Pear had not received a First-class Certificate previously, but "better



FIG. 46.—IRIS SINDHERS X. (SEE P. 104)

In this way, a fresh batch of roots is emitted from the stems each time that a fresh top-dressing is laid on the ridge. The warm, moist soil and uniformly high, genial, atmospheric temperature observed in each and all well-managed Cucumber-houses being potent factors in the free emission of roots and the production of healthy, fruitful top-growth and heavy crops of large, fine fruits. The plants should be planted at 2 feet apart on the ridges, a small stick being put to each for its support, and secured to the lowest wire of the trellis. In planting, the soil should be made fairly firm about the plants, being careful not to press the stems with the hands in doing so, watering with tepid water to settle the soil about the roots; lukewarm water being also used at each subsequent watering and when damping-down the plants.

The raising of young plants is generally proceeded with simultaneously with the preparation of the houses. Where several thousand young plants are required, to plant a block of houses built on piers, and having altogether only two outside and end walls, one house, enclosed by continuous side and end walls, and provided with an extra number of hot-water pipes, and having a heating apparatus to itself, is set apart for raising the necessary number of young plants. But

stopping, the main growths should be allowed to reach the top wire of the trellis before being again pinched. Great care and judgment must be exercised in the matter of affording water, top-dressing, and in keeping up of a minimum growing atmospheric temperature of 70° or thereabouts. In view of securing heavy crops of straight handsome fruit, it is important that the plants should not experience any check, more especially when swelling the first batch of fruit, through an inadequate quantity of tepid water being afforded at the roots, and top-dressing with slightly warmed soil of the description indicated above not having been attended to at the right time, i.e., as soon as the young roots had appeared through the top and sides of the ridges, and perhaps, a sudden fall of rather long duration of the temperature of the house. To one, or all three of the above-mentioned drawbacks combined may be attributed the presence of an undue quantity of deformed Cucumbers—commonly called "crooks"—at a time when the plants should be in full vigour, and bearing heavy crops of first-quality fruit.

All saleable fruit should be cut, graded, properly packed, and despatched to market three times a week—Monday, Wednesday, and Friday. Should there be enough of "crooks" to fill a flat or

late than never." This variety has been seventy years in commerce, and is of French origin. Of the seven varieties comprising the exhibit, Josephine de Malines was much the best. It is a delicious Pear in a good season, and not ready usually for dessert before February. The season 1900-1901 is much earlier for Apples and Pears, and the variety named, grown in Northumberland, is now past its best. The variety thrives in diverse soils and situations, and, as we know, a warm, well-drained soil favours the early ripening of the fruits, and conduces to high flavour. The late Mr. Blackmore, who was a severe critic as regards Pears [*Vide Hogg's Fruit Manual*, Ed.], stated it to be of grand quality at Twickenham; and it is undoubtedly one of the most valuable Pears in the valley of the Thames. At Syon the tree makes a fertile pyramid or bush if worked on the Quince stock, and rarely fails to fruit; the fruits are above the middle size, and of nice shape. The habit is rather straggling on the Pear stock, whereas on the Quince it is compact and shapely.

Another variety shown that is worthy of notice is Bergamotte d'Esperen, of which there was a very good dish; indeed, the flavour was very little inferior to that of Josephine de Malines. In some soils it is unreliable, although at Syon no fault can be found with its fruiting, only the fruit does not ripen well, and is at times hard and devoid of flavour, no matter when gathered or how carefully it is stored. The fruits of this variety shown by Messrs. Veitch were taken from pyramid trees. The finest examples I ever observed were from cordons trained on a west wall. This Pear is supposed to be in season till the months of April and May, but it has never been my experience to have good fruits much later than February. In Northumberland the same holds good, but not many trees of this variety are grown there. [It will not ripen always on a south wall there. Ed.]

Another Pear in Messrs. Veitch's exhibit was Ne Plus Meuris, a variety which in some gardens bears enormous crops, so much so, that, to do it justice, it should be severely thinned, and the fruit stored in a cool fruit room; gathered late it will keep for a long time. At Syon the tree bears fruit in clusters, does not keep well, and is not first rate. The flavour of the fruits shown was very nice; there are two varieties sent out under this name, the one mostly grown having rather smaller fruits, uneven in shape, with a rough skin. In some kinds of soil the flesh is melting, and of a rich vinous flavour.

Easter Beurré, a well known variety, cannot, I fear, be termed a trustworthy variety, and the fruit shown was deficient in flavour (a rather common failing in retentive heavy soils), although a valuable Pear where it succeeds. Even when afforded special attention in such soils, the fruit is seldom good, and it spots badly. Olivier de Serres, next to Josephine de Malines, is one of our most trustworthy late Pears, producing medium-sized fruits of delicious flavour. It makes a prolific cordon, and is worthy of a place on a wall. Its season is March, and it is customary for the fruit to be left on the trees to a very late date.

Beurré Rance as shown was disappointing, being rather small, and lacking in quality; but it is a variety that, even when afforded special attention, fails in many places, and is mostly gritty at the core. Sometimes splendid crops of fruit are met with on standard trees. The other variety shown, St. Germain, has large-sized fruits, and the tree needs a well drained loamy soil. In certain sorts of soil the fruit is lacking in juiciness and flavour.

I have touched upon all of the varieties shown on the occasion named, and if the editor will grant me further space I will give my experience of other good late Pears grown at Syon, and in Northumberland. G. Wythes.

ENQUIRY.

WHERE can seed of Osier-Willows be procured?

THE WEEK'S WORK.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HUSSEY PACKE, Esq., J.P., Prestwold Hall, Loughborough.

Ventilation, Temperatures, &c.—The fluctuations of the outside temperature during February and March, give cause for close attention on the part of the gardener in charge of the plant-houses, cold winds and bright sunshine often coming together, and the temperature in the houses rising higher than is desirable, unless air be admitted in good time by the upper sashes, or on the side opposite to the direction of the wind. If the air from the side ventilators impinges on the plants standing on the stages, the former must be kept closed during cold, windy weather. Where air is admitted by ventilators made in the side and end walls, and is brought into contact with hot water-pipes as soon as it enters the house, no harm will be done in mild weather. Every plant-house should be closed sufficiently early in the afternoon, so that sun-heat may add to the internal warmth in the early hours of the night, thus avoiding the use of the heating apparatus to any great extent at that time. The temperature of the stove should be steady at from 60° to 63° by night, and 70° to 75° by day. The temperature of a cold greenhouse should be 45° to 50° at night, 55° to 60° by night. During bright weather a slight damping of the paths is advisable early in the day. The temperature of a conservatory will be agreeable if it be kept at about 50° to 55° at night, and 60° during the day, air being afforded whenever the weather is favourable for so doing.

The Forcing-house.—In order to keep up the supply of flowering subjects, *Deutzias*, *Viburnum Opulus*, *Gueldres Rose*, *Azaleas mollis* and *pontica*, *Staphylea colchica*, *Syringa persica* and *S. p. alba*, *Hydrangeas* and *Rhododendron hybridum* may be afforded a slight amount of warmth. *Lilium longiflorum* and *L. candidum* may likewise be brought on to form a succession to *L. Harrisii*.

Lilies.—*L. auratum* may still be potted up, using 6-inch pots for them, and a compost consisting of rough loam, peat, and fine leaf-soil, and a handful of coarse sand under and around the bulbs. Lilies should be plunged in a bed of tree-leaves or cocoanut-fibre-refuse in a cold frame. In potting, leave sufficient space in the pot for a large addition of rich soil after stem growth has reached half its full height. The large importations of *L. auratum* and its cheapness places it within the reach of all who possess a common frame. In May the plants may be placed in a sheltered situation outdoors, and brought into the greenhouse or conservatory to flower as may be required.

Pot Roses.—What remain of the stock of these plants may now be brought into ainery or Peach-house, at about the time it is closed for forcing. If pruning and top-dressing were carried out last autumn, nothing further will now be necessary. A keen watch should be kept for aphids, which do much harm to every part of a Rose-plant, and measures should be taken directly the pests are noticed. Pot Roses in a forward state may be afforded diluted liquid-manure water, or a dressing of some artificial manure occasionally, such as Clays.

Fuchsias pruned now should be shaken out of their pots, potted up into others of less size, and introduced into a forcing-house or warm span-roofed frame, where they may be syringed daily. When root-action has become well established, the plants may be transferred into pots of sufficient capacity to last through the flowering season. *Fuchsias* require an open compost, such as turfy loam, with the small particles riddled out, leaf-soil, Mushroom-bed-manure, and sand. Attend to the pinching of the shoots, and removal of flowers until about six weeks before the plants are required for decoration.

Caladiums which show signs of active growth must now be potted in a mixture of peat, loam, leaf-soil, and silver-sand. Place the tubers singly in small pots, according to their size, and plunge them in a brisk bottom-heat. Syringe daily, but withhold water from the tubers until growth and roots have been made. Any varieties not showing growth may be let alone for a month. By such means we have obtained the variety *argyrites* in good condition for decorative purposes in November.

Marquerites.—Autumn-struck plants may be put into pots in which they will flower, and such plants will afford a supply of flowers during the months of May and June. Do not make the compost too

stimulating. One consisting of road-drift, loam, and leaf-soil, would be suitable. Pot firmly, pinch the shoots once or twice after growth commences, and when the flower-buds are seen afford the plants weak manure-water.

Tuberose.—A good batch of these may now be potted. Rub off all side-shoots and suckers, and place the roots singly into small 60's until growth has commenced. Afford a temperature of 60° and bottom-heat, syringing them daily. When growth has been made, and root-action established, shift the plants into 5-inch pots, using a rich soil of loam, leaf-mould, steamed bones, and sand. Afford them an intermediate temperature, and use the syringe freely.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. I. MEASURES, Esq., Cambridge Lodge, Flodden Road, Camberwell.

Shading.—The slightly more powerful sunshine reminds the Orchid cultivator of the necessity ere long of bringing the roof-blinds into use, and even now in the sunnier parts of southern England blinds must be let down during the sunnier hours on some of the divisions where cool-house plants are in flower. The roller blinds made from Bamboo slats and from reeds have come greatly into use of late years, and for some Orchids they are very suitable, viz., *Cattleyas*, *Dendrobiums*, *Laelias*, *Miltonias*, and *Oncidiums*, which are not harmed by a reasonable amount of strong light. Orchids in cool houses having north and west aspects may be covered with them, but such as face south should be afforded a little additional shade of some kind when required. Blinds that remain on the roof the whole year are of great advantage, as by their use artificial heat is to some extent saved on frosty or cold and windy nights, and more wholesome conditions obtained. For *Vandas*, *Aërides*, and *Phalænopsis*, the thicker sort of tiffany affords sufficient protection in the summer weather. Blinds of all sorts should be kept clear of the glass by means of runners fixed to the roof about 6 inches above it. Fixed in this way, there is a constant passage of air between the blinds and the glass, and the interior of the house is much cooler than is the case when the blind lays on the glass.

Pleurothallis.—The lovely *P. Roezli* is now developing its racemes, which will soon show the rich purple flowers, and the plants require a more liberal treatment. Most varieties of *Pleurothallis* succeed well with the *Masdevallias*, but I find that *P. Roezli* requires slightly warmer conditions during the winter months, and I remove it to a temperature of 55°. The plants should be cultivated in teak baskets, and suspended near to the roof. Every precaution should be taken to retain the potting compost in a sweet condition. Immediately the plants have passed out of flower, they may be repotted if necessary, affording them liberal drainage, and using a compost of equal parts fibrous-peat and chopped living sphagnum-moss. Other species worthy of cultivation are *P. scapha*, which has long racemes of green and purple flowers; and *P. punctulata*, a very scarce plant, which produces *Restrepia*-like flowers about 2 inches long from the base of the leaves, the flowers being in colour white and deep purple. It succeeds best when grown in shallow pans, and suspended near to the roof, and may be repotted now if necessary, using the compost described above, which should be made moderately firm. These plants may easily be divided, and the stock of them increased thereby. Divisions of the rhizome between the leaf stalks may be made, and the plants potted up; but several of the more common species may be increased by simply cutting off a leaf with a little stem, and laying it as a cutting in the compost, keeping the same constantly moist. The smaller growing *Pleurothallis*, such as *P. Grobi*, *P. ornatus*, *P. lateralis*, and others of this section which will shortly flower, should not be repotted in the early spring, unless the compost has become very decomposed. If potting is done in the spring instead of during September, the plants do not get re-established quickly, and they suffer from the effects of the heat of summer.

Restrepias may be repotted or top-dressed at the present season. The species succeed best when grown in shallow pans, and suspended. They need a slightly warmer temperature when producing their flowers than that of the cool *Masdevallia*-house, and the great moisture in this division may cause the flower-buds to decay. The potting compost should be the same as that recommended for *Pleurothallis*.

Cryptophoranthus.—The best of these is *C. Dayanus*, but the "Window Orchid" *C. fenestralis* is also an interesting botanical species, requiring conditions similar to the *Masdevallias*, except that the plants should be cultivated in baskets and suspended. Repotting should be done in the early spring, affording the plants the best drainage possible, and pressing the compost above described until it is moderately firm.

THE FLOWER GARDEN.

By T. H. SLADE, Gardener to Lord POLTIMORE, Poltimore Park, Exeter.

Yuccas, often used as single plants on the grass, are also very suitable plants for large informal beds. The bed should be made in an open position, but one not exposed to high winds. Plant, with good single specimens, rather thinly, allowing space around each for some dwarf-flowering shrubs, such as *Spiraea aruncus*, *S. prunifolia* fl. pleno, or *S. media confusa*. The outer portion of the bed may be planted with some of the *Megaseas* or Giant *Saxifragas*, and an edging of *Lychnis viscaria splendens* fl. pl. *Yucca gloriosa* is one of the best; *Y. filamentosa* is very good for some situations, but it requires a light soil.

Hardy Fernery.—Remove any dead fronds or rubbish, and place fresh labels where required.

Croquet or Tennis Lawn.—Level and make good any inequalities in the lawns, sweeping and rolling them when time and weather permits. A useful broom for sweeping grass or broad walks may be made by nailing a few strips of wood together, leaving sufficient space between for lacing in Birch or Snowberry spray, making the face of the tool 18 inches or more in width.

Carnations.—If these were not planted in the autumn, beds should now be dug and prepared, so that they may be ready for the plants in March. Fairly rich land will need no manure, but a good dressing of lime may be dug in. I have found the best varieties for retentive soils to be Mary Morris, Raby Castle, Mrs. Eric Hambro, Mrs. Reynolds Hole, Ketton Rose, Duchess of Fife, and Mrs. Charles Daniels.

Pinks.—Any that have not yet been planted should be put out in favourable weather. The variety Ernest Ladham is a nice addition to Mrs. Sinkins and Her Majesty, and the newer Albino is also good for many purposes; it is very free blooming, and the flowers are more like a small Carnation than a Pink, but it does not possess the fragrance of the older Pinks.

General Remarks.—When the bulbs in beds have pushed their growths through the soil, stir the surface with a hoe during favourable weather; it will give it a fresh and tidy appearance. Any vacant beds intended for summer planting should be manured if necessary, and dug.

THE HARDY FRUIT GARDEN.

By C. HERRIN.

Peach-trees as Bushes.—In warm localities the early ripening varieties, as Waterloo, Alexander, Hale's Early, and some others, will ripen fruits with certainty in favourable seasons. During the past summer good fruits so grown were exhibited at the Royal Horticultural Society's meeting from two Slough nurseries, where equally good fruits had been produced for several years almost without intermission. Trees cultivated in this manner should be planted in open yet sheltered positions, where fully exposed to all the sun's rays. The soil should not be rich and deep, but rather of a shallow, calcareous nature, and old mortar-rubble may be freely added. Having planted and grown trees in this way, I can recommend them, especially if sufficient walls are not available. If strong maiden trees are planted, the growths require shortening somewhat the first year or two, to strengthen the branches forming the framework of the tree; afterwards a little thinning out is all the pruning that is necessary.

Bushes and Pyramids of Apples and Pears should be taken in hand as soon as possible after the pruning of the wall fruit-trees. Assuming that the shoots were shortened in the months of August and September to three or four leaves, the operations at the present time will be to cut back any of those which were missed at that time, and to partially do the same to the leading shoots. Branches where growing too close together should be thinned out, taking out those that are more aged. Young trees

and bushes which have reached the limits of the space allowed, may have their leaders cut back to about half their length, or further, as circumstances may demand. Some varieties of Apples which form fruit-buds at many of the ends of lateral shoots, require very little pruning at this season. Instances of such varieties are found in Lady Sudeley, Cornish Gilliflower, Golden Noble, Gascoyne's Seedling, and Irish Peach, the pruning of which should be carried out in the summer, excepting in reducing the length of the leading branches forming the ground-work of the trees, which may be shortened now similarly to other varieties. Again, very strong growers, as Bramley Seedling, are better grown as bushes, and not very freely pruned, or but a light crop will result. The better course, if a heavy crop of fruit be not obtained, is to root-prune the trees in the early autumn. Bramley's Seedling is an instance of a notoriously bad fruiting variety when young, unless root-pruning be resorted to. Apple and Pear bushes whose shoots were not cut back in early autumn will require a considerable amount of cutting-in at the present season, all laterals being shortened to about two buds, and leaders, if strong, to nearly half their length, weaker ones almost close, the end bud in every case being in the direction it is desired the new growth should take. Pyramids have leading shoots which must be tied erect to a stake if necessary, and side branches taken from the stem so as to form a neat, regular tree. In the early training of trees, no more branches should be left than are sufficient to form the framework. In starting with maiden trees, they should be cut back to five or six buds, which, in the case of pyramids, should produce a central shoot from the upper bud, with four or five others around it; while in the case of bushes, the central shoot not being required, the head should be kept open. In giving shape to young plants, the branches should be fastened to small stakes stuck into the soil round them, to which all refractory shoots should be tied. Aged trees that make but little growth, and are crowded with fruiting-spurs, should have a number of the latter removed.

FRUITS UNDER GLASS.

By MALCOLM MCINTYRE, Gardener to Sir CHAS. TENNANT, The Glen, Innerleithen, Peeblesshire.

Pines.—Most of the plants forming the early batch will now be showing fruit, and the temperature may be raised to 70° at night and 80° by day, with a rise of 5° after damping the beds and paths and closing the house in the afternoon. When the flowering stage has passed, spray the plants over with the syringe early on fine days, when the water will be quickly absorbed by the atmosphere. Maintain a bottom-heat of 85°, apply water freely when required, but not before, and use weak farmyard manure-water and guano-water alternately. General fruiterers, from which the above are selected, may now be encouraged by renewing the bed, to raise the temperature to 80° or 85°, and when this temperature has been reached, carefully afford supplies of water at 80° to 90°. Remove all loose material from the surface of the soil, and top-dress with a rich compost of friable turfy loam and bone-meal. Make the plants firm in the pots by packing dry turf around the collars. Keep the house moist, and carefully avoid getting water into the hearts of the plants, drip from the roof will cripple the best fruits before the injury has become visible. When the temperature is at 80° on fine days, afford a very little air in the forenoon, and close the structure about 1 P.M. to retain moisture and economise fuel.

Successions.—In order to keep the bed sweet and moist, have the materials turned over, adding a little fresh tan. Attend to all plants which require potting. The balls should be gradually moistened with warm water, pots and compost dry and warm when used, and the operation performed in as brief a time as possible. If the plants are to be divided into sections for successions, take the strongest and best first, and so on until the weakest and latest have been overhauled and disposed of. Any plants that have not filled their pots with roots may be put back for a time, or if they are in a bad condition shake them out and repot in the size of pot used for suckers. Pot firmly and plunge them in a sweet moist bottom-heat of from 75° to 80°. Do not apply water until the plants have made new roots; but maintain a moderately moist atmosphere by spraying the walls and other surfaces with water.

Vines.—If Grapes are required in July and August the Vines should now be started. To assist them to break evenly and strongly, maintain a

moist genial atmosphere by syringing the rods three times a day, and damping other surfaces in the house. Avoid keeping the rods constantly dripping with water, for the tendency in that case is to cause the emission of aerial roots, which are unsightly, if they are not injurious. A temperature of 50° at night, 55° by day, and 65° from sunheat, will be suitable until the buds begin to move. Make the inside border thoroughly moist by repeatedly affording tepid water. When this has been done and the Vines break weakly, afford liquid manure. Protect outside borders from cold. A light covering of stable litter, or other partially-decayed material, is all that is required for the purpose. Do not apply thick coverings, particularly if the material is likely to settle into a close compact mass and prevent the free access of the air.

Fruit-room.—Carefully look over bottled Grapes, and remove any berries which show the least sign of decay. Do not use more fire-heat than is necessary; and to prevent an accumulation of moisture, admit air on every fine day. Occasionally replenish the bottles with clear soft water. An equable temperature of 45° to 50° is most suitable.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bicton, East Budleigh, Devonshire.

Hotbeds.—Attend to the linings of frames containing Potatoes, Asparagus, Seakale, Radishes, and Carrots, thinning plants of the last two crops from 1 to 2 inches asunder. If water be required, which is unlikely, let it be afforded at a temperature from 75° to 80°, and at midday. Mat up the frames at night, as the weather may change in a few hours.

Parsnips and Carrots.—Any of these roots still remaining in the ground should now be lifted, storing them in as cool a place as possible, and working in some sand or fine coal-ashes between each layer; they will be in a fit state for use for three months.

Artichokes.—These tubers should be afforded a like treatment, reserving the best shaped, middle-sized tubers for planting, which latter operation may be performed from the present date to the end of the month of March. Be sure to dig up every tuber, otherwise much labour will be caused during the summer. Whenever it is possible a fresh piece of land should be planted annually, which should be trenched, and the sets planted 6 inches deep and 2 feet or more apart. The white variety is considered the better one, though the old purple-skinned still holds the field.

Turnips.—If a two-light or larger frame can be set apart for an early sowing, a bed of tree-leaves should be got in readiness, and some light soil put in and made firm and level, and when warmed through sown broadcast with an early variety. Thin the plants early to 4 inches apart, ventilate the frame on sunny and mild days, and never let the plants suffer lack of water, which should be warmed before using. The crop will be ready to pull in eight weeks. Extra Early Milan is as good a variety as any for frame work. Turnips still in the open ground should be pulled and stored like Carrots.

Shallots.—Plant these as soon as the ground is dry enough, in rows, 10 to 12 inches apart, and 6 inches apart in the rows; merely pressing the bulbs into the soil. It is a good plan to have the bed adjoining the main crop of Onions.

Tomatoes.—A sowing of seed should now be made, or cuttings may be rooted instead, the latter fruiting earlier. Put three seeds into a 3-inch pot filled with light soil, and thin out the weaker ones when large enough leaving one; keep near the glass in a temperature of 60°, shift into 48's, and finally into 10-inch pots. For potting the plants use sound turfy-loam, a small quantity of bone-meal and soot, train up to one stem only, pinch out the laterals as fast as they appear, and as soon as a crop of fruit is set, remove the point of the stem. If large fruits are expected, reduce the number of fruits in the clusters, and afford liquid-manure once or twice a week. Continue to fertilise the blooms, using a camel-hair brush for the purpose. For the outdoor crop I have nothing to add to the article by A. Petts, in the *Gardeners' Chronicle*, February 2, p. 73.

Mint.—Introduce some plants of Mint and Tarragon to a warm Peach-house, keeping them fairly moist in pots or boxes, and near to the roof-glass.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Letters for Publication.—As well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

THURSDAY, FEB. 21 { Linnean Society, Meeting.
Royal Botanic Society, Meeting.

FRIDAY, FEB. 22 { Sandy (Beds) Horticultural Society,
Annual Meeting.

SALES.

MONDAY NEXT.—Japanese and other Lilies, Standard and Dwarf Roses, Carnations, Begonias, Lily of the Valley, &c., at Protheroe & Morris' Rooms.

WEDNESDAY NEXT.—Azaleas, Rhododendrons, Gladiolus, Hardy Perennials, Davallias, Dahlias, Lilies, &c., at Protheroe & Morris' Rooms—Roses, Tuberose, Liliums, and Herbaceous Perennial Plants, at Stevens' Rooms, 38, King Street, Covent Garden.

FRIDAY NEXT.—Imported and Established Orchids, and Mexican Orchids, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—39.4°.

LOCAL TEMPERATURES.—

LONDON.—February 13 (6 P.M.): Max. 37°; Min. 28°.

February 14.—Fine, frosty.

PROVINCES.—February 13 (6 P.M.): Max. 43°; Scilly Isles; Min., 26°, N.E. Scotland.

The Royal
Horticultural
Society.

The annual meeting of this Society was held in the Lindley Library on February 12, and was largely attended. The proceed-

ings were markedly and legitimately permeated by a spirit of satisfaction at the now flourishing condition of the Society. Although the subject of a new garden was very lightly touched on in the report, a very satisfactory statement was elicited from the President in answer to some remarks made by Mr. ELWES, to the effect that no steps will be taken by the Council without the full authority of the Fellows. One Fellow did indeed suggest that a previous resolution on the subject should be rescinded, but no doubt the feeling of the meeting was, after the expressions of opinion that had been made public, that the matter might safely be left in the hands of the Council.

The formal business of the meeting included references by the President to the steps that had been taken to mark the concern felt by the Society in the death of the late Patroness. An address of condolence had also been sent to His MAJESTY, and a wreath constructed by Messrs. WILLS & SEGAR was deposited in the mausoleum at Frogmore.

In further commenting on the report, Sir TREVOR LAWRENCE alluded to the training given to young gardeners at Chiswick, and to the demand that existed for educated gardeners.

With reference to the Temple Show, it was intimated that if circumstances should at any time prevent the holding of the show in those gardens, the Earl of ILCHESTER, a new member of the Council, would place his beautiful gardens at Holland House, Kensington, at the disposal of the Society.

Other subjects to which we referred in our last number were then alluded to, and acknowledgment made of the services of the members of the several Committees, of Prof. HENSLOW, and of the readers of papers.

Sir TREVOR then passed on to a very striking comparative statement of the state of affairs at South Kensington in 1887-1888 with that at present obtaining.

In 1887 the number of Fellows was 1,329, including 556 life Fellows, whose compositions had long been spent, so that there were then only 773 annual subscribers, 221 of whom resigned when the Society declared its intention to remove from South Kensington. The income was then £1,938. The debt at that time was £1,180, and the annual expenses £3,000; now the income has risen to £8,193, and the expenditure to £6,000. There is an invested surplus of £10,000. The number of Fellows in 1888 was 1,108, whereas up to the end of 1900 it amounted to 4,750; since then there have been elected 111 members, or an increased as compared with 1888 of 3,753. The proportion of the amount paid in salaries to the income was 17½ per cent. in 1887-88; it is now 8½. The net cost of the Journal was £870, which amounts to a sum of 3s. 4½d. per Fellow.

For this greatly improved condition of affairs, the Society was largely indebted to the exertions of Baron Sir HENRY SCHRODER, Sir WILLIAM THISELTON-DYER, and Sir MICHAEL FOSTER, three gentlemen, it may be parenthetically mentioned, who expressed their disapproval last year of a certain scheme for a new garden, now happily dropped.

Sir TREVOR concluded by moving the adoption of the report, which was seconded by Mr. ARTHUR SUTTON, who eulogised the action of the Council and officers.

Surgeon-Major INCE suggested some extension of the system of affiliation, and gave some useful hints for the improvement of the form in which the report is issued.

Mr. ELWES thought that fuller information should have been given relating to the proposals for the establishment of a new garden, especially in reference to finance, management, and control of the new garden should it be purchased. He pointed out the danger of going into this matter without full consideration. As the future of the Society hangs on this departure, Mr. ELWES asked, "What do the Council mean?" Mr. ELWES also alluded to the condition of the houses at Chiswick, and to the apparently small sum expended on repairs; a circumstance afterwards explained by the fact that the repairs are mostly executed by the Society's own staff, and the charge on that account is included in the item "labour."

Mr. WIGAN complained, not without reason, of the inadequate provision made for the lectures in the Drill Hall, and to the difficulty of hearing the lecturers.

Another Fellow, whose name we did not catch, raised the question whether a garden was wanted at all. His notion was that a new garden would be ruinous to the Society, and that an exhibition hall was a more crying necessity. He proposed that the resolution carried at a meeting in April last, relating to this subject, should be rescinded.

Sir TREVOR LAWRENCE, in replying, took the opportunity of thanking Mr. WRIGHT and the staff at Chiswick and Victoria Street for the excellence of their work. The Council had given their best attention to the question of the site, and would give the fullest information to the Fellows. At present they had not seen

one that was suitable, but the Fellows might be assured that no step would be taken without the full authority of the Fellows.

Mr. GORDON proposed and Rev. Prof. HENSLOW seconded a vote of thanks to the President. Prof. HENSLOW, in the course of his remarks, thanked the Society for the pleasing references that had been made to his lectures. His services to the Society had now being going on over a period of twenty-one years. As to the examinations, he thought the time had come for the preparation of a syllabus of a less elementary character.

In finally acknowledging the vote of thanks, the PRESIDENT alluded to the support he had received from the Council, and to the desirability of having representatives of the trade on that body. As to rescinding previous votes, the PRESIDENT considered that while the matter was still *sub judice*, it was better not to raise the question. In accordance with the PRESIDENT's suggestion the resolution was withdrawn. The Council, said Sir TREVOR, were very desirous of considering the proposals for a hall such as had been suggested.

The following gentlemen were added to the Council, viz., Captain HOLFORD, Rev. HUGH BERNERS, and Mr. H. B. MAY. The Right Hon. J. CHAMBERLAIN, M.P., the Earl of DUCIE, Baron ROTHSCHILD, Baron Sir HENRY SCHRODER, and Sir FREDERICK WIGAN, were appointed Vice-Presidents.

The meeting then terminated, and the Council and Fellows made way for the members of the Scientific Committee, whose proceedings will be reported on a future occasion.

LINNEAN SOCIETY.—On the occasion of the evening meeting to be held February 21, 1901, at 8 P.M., the following papers will be read:—I. On the Affinities of *Æluropus melanoleucus*, by Prof. E. RAY LANKESTER, F.R.S., F.L.S., and Mr. R. LYDEKKER, F.R.S. II. Étude d'une espèce nouvelle de *Lépapèdes*, par M. A. GRUVEL.

"BOTANICAL MAGAZINE."—The following plants are figured in the February number:—

Agave Peacockii (Croucher in *Gard. Chron.*, 1873, p. 1400, fig. 283).—A native of Central Mexico, which, though long known, has not been observed in a flowering condition till 1899, when it flowered at Kew; tab. 7757.

Neillia Torreya (S. Watson).—A rosaceous shrub, native of the Rocky Mountains. It has leaves like those of a Ribes, and globose heads of white flowers like those of a Spiræa; tab. 7758.

Veronica glauca (Sibthorp and Smith).—A loosely spreading annual, with small, shortly stalked, roundish, crenate leaves, and blue flowers, so regular in form as to resemble those of a Crucifer rather than those of a Scrophulariad; it is a native of Greece; tab. 7759.

Echidnopsis Bentii (N. E. Brown).—A curious succulent Asclepiad, from Southern Arabia. The stems are cylindric, ribbed, tubercled; flowers stellate, rosy-purple; tab. 7760.

Rosa Seraphini (Visiani).—A dwarf Rose, native of Italian mountains. The leaflets are suborbicular, the flowers rose-pink, of the diameter of a shilling; tab. 7761.

THE NATIONAL ROSE SOCIETY.—The President and Committee of the National Rose Society, London, sent to Frogmore, on the occasion of the QUEEN'S funeral, a lovely composition, the work of Mr. MOUNT of Canterbury, chiefly of Roses. Among them were specimens of Catherine Mermet, La France, Niphetos, and Perle des Jardins, with Lilies of the Valley, and a ground-work of double white Azaleas.

THE JUBILEE OF THE "GARTENFLORA."—Our German contemporary, the *Gartenflora*, upon entering the fiftieth year of its existence with the January number, gives an interesting account of its origin and development. When EDWARD REGEL, at that time Inspector of the Botanic Garden of Zurich, started his *Gartenflora* in 1852, he was no stranger to literary work, having already written, in collaboration with Herr J. SCHMITZ, of Bonn, his *Flora Bonnensis*. While serving as assistant in the Royal Botanic Garden of Berlin (1839-40), he published in OTTO & DIETRICH'S gardening journal "Die Hauptmomente der Gärtnerei" from a physiological point of view. This was reviewed in the *Gardeners' Chronicle*, and anticipated LINDLEY'S "Theory of Horticulture." In 1842 he had completed his monograph of Erica, and had published it in the *Transactions of the Verein zur Beförderung des Gartenbaues* (the Prussian Horticultural Society). In 1843 Dr. REGEL edited, with his friend, Professor HEER, of Zurich, the *Schweizerische Zeitschrift für Land und Gartenbau* (the Swiss Agricultural and Horticultural Journal), which was then divided into two sections, the one devoted to agriculture, the other to horticulture, Dr. REGEL undertaking the latter portion. In 1852 he began the publication of the *Gartenflora*, of which he remained editor in St. Petersburg till the year 1884. At the close of the thirty-third year of issue, Dr. REGEL, having then completed the seventieth year of his age, confided the editorship to Mr. B. STEIN, of the Royal Botanic Garden of Breslau. It was in 1887 that Dr. WITTMACK became the editor, and he still retains the post. The journal has undergone several changes in the publishing department, and is at present sent out by the brothers BORNTAEGER, of Berlin, who have a large business in the publication of botanical and horticultural works. Dr. REGEL had many opportunities of describing new plants from the German and Swiss gardens, and his position as Director of the Botanic Garden of St. Petersburg, one of the richest collections in Europe, gave him many advantages. His son, Dr. ALBERT REGEL, also aided him by his travels in Central Asia. The *Gartenflora* has valiantly "run with the age" in all its changes, giving due prominence, each in its turn, to the trade aspect of horticulture, to dendrology, to fruit-culture, plant diseases, physiology, and the chemistry of soils and manures. Dr. WITTMACK, with justifiable pride, draws attention to its 1482 coloured plates, its many thousand black and white illustrations, and to its long list of eminent contributors. It is sincerely to be hoped that the success of the *Gartenflora* will not cease with its jubilee, and that it has still a long career of useful life before it.

ROSE CONGRESS AT NICE.—On March 29 will be held the fifth annual congress of the Rose Society of France. An imposing programme is issued, and the exhibition will no doubt be ravissante.

CHAMBRE SYNDICALE DES HORTICULTEURS BELGES.—We learn that M. ARTHUR DE SMET has been elected Vice-President in place of M. E. PYNART; and that M. HENRI DE WILDE has been appointed Secretary.

BUSINESS REGISTER.—Messrs. PROTHEROE & MORRIS, 67, Cheapside, now issue a *Register of Nurseries* and other garden properties to be let or sold. The *Register* should be consulted by all who desire to purchase businesses, or who are on the look-out for partnerships.

STOCK-TAKING: JANUARY.—No better idea of the beneficent character of the Victorian era could possibly be gained than that afforded by the most cursory glance at the yearly Returns of Trade and Navigation published in 1840 and 1900—the former a puny register of a few pages, the latter a tremendous volume of closely compacted figures. In the little volume for the past month of January

there are some 108 pages, and their contents deal with trade to the value of not less than 703 millions sterling. The imports for January reach a total of £45,987,516, against £44,555,914 for the same month last year, showing a gain of £1,431,602. Our usual extracts are as follows:—

IMPORTS.	1900.	1901.	Difference.
	£	£	£
Total value ...	44,555,914	45,987,516	+1,431,602
(A.) Articles of food and drink—duty free ...	14,531,453	15,778,502	+1,247,049
(B.) Articles of food & drink—dutiable	2,324,550	2,140,857	-174,702
Raw materials for textile manufactures ...	8,276,603	9,218,659	+942,056
Raw materials for sundry industries and manufactures	4,196,534	4,073,790	-122,744
(A.) Miscellaneous articles ...	1,461,095	1,435,851	-25,244
(B.) Parcel Post ...	145,690	87,462	-58,228

As to fruit and vegetables, the subjoined figures are of interest to all consumers—everybody:—

IMPORTS.	1900.	1901.	Difference.
	Cwt.	Cwt.	Value.
			£.
Fruits, raw:—			
Apples ...	208,823	238,151	+61,329
Apricots and Peaches	.....	19	+114
Bananas... bunches	9,242	119,834	+13,782
Grapes ...	449	4,610	+4,226
Lemons ...	104,170	97,495	-532
Nuts—Almonds ...	10,950	4,989	-12,664
Others, used as fruit	37,703	42,691	+1,708
Oranges... ..	914,465	833,341	-22,245
Pears ...	2,369	1,237	-1,567
Plums ...	20	4	-78
Unenumerated...	7,206	6,235	+980
Dried fruit:—			
Currants ...	53,308	39,315	-22,766
Raisins...	19,991	17,673	-6,754
Vegetables, raw:—			
Onions ... bush.	631,017	490,774	-13,369
Potatoes ... cwt.	275,192	451,055	+27,422
Tomatoes ... "	27,496	37,768	+18,719
Vegetables, raw, unenumerated ... value	£70,496	£27,680	-42,816

From all of which it will be seen that even in the depth of winter, we contrive to have at market a fairly extensive selection. Our—

EXPORTS

show very respectable totals. The grand total for the month being £24,753,531, as against £23 583,682 for January, 1900—an increase of £1,169,849. Cotton goods take credit for an increase of nearly three-quarters of a million sterling, but woollen fabrics and linen dropped. Coal showed a large increase, as also did telegraph-wire, and tonnage of ships built for foreign owners. The Indian market improves as the Chinese gives way, from causes easy to understand. The South African boom is still a thing of the future, but all the same it is comforting to note an advance of over 4 per cent. in the face of war, and increasing bank rate.

"THE ORCHID STUD BOOK."—Capt. HURST wishes to thank all those correspondents who have kindly favoured him with replies to his enquiries, and much regrets that he has not time to reply to all individually. As a result of the many valuable suggestions received, he has decided to considerably enlarge the scope of the work, which will now include: (1) The first name and reference of all recorded crosses, regardless of their æsthetic merits, with references to figures, and short description; (2) Selected varieties of above which have been figured in various works, with

references and short description; (3) The parent species and varieties of above, with selected figures and short description.

"FRUIT-GROWERS' YEAR BOOK AND MARKET GARDENERS' GUIDE."—(London: Cable Office, Hatton House, Great Queen Street, W.C.). The 1901 issue of this text-book of the fruit-growing industry contains "articles, notes, and interviews directly dealing with the latest developments of the industry; essays by authoritative writers, statistics and tables, and a directory of fruit-growers and market-garden farmers." In fact, this, the ninth annual issue of an illustrated hand-book, published at the moderate price of 1s., is likely to prove quite as useful as its precursors to the public to whom it is addressed.

SCIENCE AND THOSE WHO RULE OVER US.—Referring to the dismissal of several of the Professors at Cooper's Hill Engineering College, a matter which lies outside our province, we are reminded of the atrocious conduct of one of our former Ministers towards no less a person than Sir JOSEPH HOOKER, when director of Kew. A writer in the *Times* recalls the situation in the following words:

"It is well to remember that one of the causes which contributed to the downfall of Mr. GLADSTONE'S powerful Administration in 1874 was Mr. AXFORD'S insolent treatment of men of science. His contemptuous reference to his intellectual superiors, Sir JOSEPH HOOKER and the staff at Kew as "gardeners," placed a black mark against the name of the First Commissioner of Works of that day which was never obliterated, and which drove him out of political life. The man in the street may not understand much about science, but he has a feeling of respect for scientific men who work for small rewards in the interests of truth and knowledge. The public is quick to resent injustice inflicted on a class who have little power of defending themselves, and whose services are of enormous and increasing value to national progress."

THE MARKET GARDENERS, NURSERYMEN, AND FARMERS' ASSOCIATION.—The following is a copy of a resolution unanimously adopted by the Market Gardeners', Nurserymen, and Farmers' Association, in meeting assembled on February 5, 1901: "The Market Gardeners', Nurserymen, and Farmers' Association, in meeting assembled, do most respectfully tender to His Majesty the KING the heartfelt sympathy of the members of the Association in the irreparable loss sustained by his Majesty and the Royal Family, in common with the whole empire in the universally-lamented death of her Majesty QUEEN VICTORIA; and do most humbly proffer to his Majesty the King on his accession unfeigned congratulations and assurances of their profound loyalty and devotion to his person and throne."

ANOTHER OPEN SPACE.—At the meeting of the London County Council on Tuesday, the 4th inst., it was announced that Mr. F. J. HORNIMAN, M.P., had presented the people of London with the Horniman Museum and the fifteen adjoining acres, at Lordship Lane, on the South-Eastern and Chatham & Dover Railway, for a recreation-ground. The value of the estate is estimated at about £75,000, and the situation is an altogether desirable and picturesque one.

THE NATIONAL AMATEUR GARDENERS' ASSOCIATION.—In the heart of the City there is carried on by a band of enthusiastic amateurs, with T. W. SANDERS, Esq., as President, some very successful work, which, it is believed, is destined to become in the near future an important horticultural society. The Association has taken up its quarters at Winchester House, Old Broad Street, E.C., where meetings and exhibitions are held on the first Tuesday in each month. Lectures are given by horticultural experts on various horticultural subjects, discussions being invited. No one but a *bona fide* amateur can become a member. The National Amateur Gardeners' Association confers medals in competition, and occasionally Honorary Fellowships upon those who have distinguished

themselves. During the summer months, outings are organised to nurseries and gardens of note; and a Dinner is held every year at the Holborn Restaurant, which is usually well attended. The annual subscription is but a few shillings. Further particulars can be had by writing to the Hon. Sec., Mr. V. STACY-MARKS, 33, Chatsworth Road, Brondesbury.

"CONTRIBUTIONS A LA FLORE DU CONGO."

—A continuation of this important work, prepared by MM. DE WILDEMAN and DURAND, is before us. About 2000 species are now known from the Congo State, many of which have been collected by Belgian missionaries and explorers. The following Orchids are enumerated in the present part:—*Eulophia gracilis*, Lindley; *E. guineensis*, Lindley; *Lissochilus dilectus*, Reichb. fil.; *L. Lindleyanus*, Reichb. fil.; *L. purpuratus*, Lindley; *Brachycorythis Leopoldi*, Kranzlin; *Mystacidium erythopolinium*, Reich. f.

THE BANQUET TO MM. VIGER AND CHATENAY.

—This celebration, organised as a recognition of the services rendered to horticulture by M. VIGER and M. CHATENAY during the great Paris Exhibition of last year, was held at the rooms of the National Horticultural Society of France on January 17, and proved a great success. M. ALBERT TRUFFAUT occupied the chair. The *Revue Horticole* of the 1st instant gives a full report of the speeches made on the occasion, and of the sonnets composed in honour of the honoured guests.

HONOUR FOR AN ENGLISH HORTICULTURIST.

—We are pleased to notice in the last list of nominations in the Order of the Mérite Agricole, the name of Mr. GEORGE STANTON, gardener at Park Place, Henley-on-Thames. Mr. STANTON, who is an honorary member of the National School of Horticulture at Versailles, is appointed Chevalier of the Order, in recognition of his services to many young Frenchmen who have served under him.

"THE DUNDEE WEEKLY ADVERTISER."

—The *Dundee Advertiser* is a paper known and respected by Britons in general and by Scotchmen in particular all over the world. And this may well be, as it has led a useful existence for a hundred years, having come into being in the early weeks of the nineteenth century. To commemorate the hundredth year of the paper a replica copy of the first number has been published, and is interesting when compared with current issues. The "oldest Scotch newspaper" has grown in inches, and in the value and number of its contents, since its first appearance, but the smaller size of the pages of the old number makes it certainly more convenient to handle (they are, by the way, about the size of those of the *Gardeners' Chronicle*) than are the great sheets of our modern daily papers. We hope the *Dundee Advertiser* has still a long career before it.

A SURVIVAL.—M. A. TOURNOUER mentions in the *Comptes Rendus* of the French Academy of Science having seen a living example of the Neomylodon in Patagonia. The superstitious terror felt by the Indians with regard to this mysterious creature gives rise to various myths and legends, so that it is difficult to disentangle the truth. M. TOURNOUER shot at the animal, but was not able to secure it. His description is necessarily very incomplete. There seems no reason why such a creature, whose fossil remains are known, may not exist in the living state.

FACTS ABOUT JAMAICA.—A brochure has reached us entitled: *Jamaica and the Imperial Direct West India Mail Service*, by THOMAS RHODES. (London: GEORGE PHILIP & SON, 32, Fleet Street, E.C.; and Liverpool: PHILIP, SON & NEPHEW, 45-51, South Castle Street.) This publication claims that the new Imperial Direct West India Service will bring fresh life to the commerce and general welfare of the Island. The recent depression in Sugar-cane growing will, it is hoped, be neutralised now that the above-mentioned fortnightly mail service can be made a means of placing the splendid fruit of Jamaica on the English markets at prices within the means of all, while the whole island, and its "magnificent climate and scenery, with all the glamour of its wonderful romance, and the picturesque life everywhere abounding, will be thrown open to the tourist of modest income and limited leisure." The descriptions and pictures of Jamaica in this book are certainly tempting to stay-at-homes wishing for a change of scene. Much practical information is given, and a map. Since the colonies ever show themselves ready to aid the mother-country, it is well that the assistance should be reciprocal, and that fruit-trade and travelling between Britain and Jamaica should be reciprocated.

THE BEST CYPRIPEDIUMS FOR CUTTING.—The *Illustrierte Garten Zeitung*, of Vienna, names the following as the three best Cypripediums for cutting purposes, viz., *C. insigne*, *C. barbatum*, and *C. Lawrenceanum*.

"BOLETIM DA SOCIEDADE BROTERIANA."—The last issued numbers of this Portuguese journal, edited by Dr. HENRIQUES, contain an account of the life and work of Dr. NYLANDER, the well-known lichenologist; systematic articles on the Rubiaceæ of Portugal, the plants of tropical Africa, and the botanical districts of Portugal.

LILIAM KEWENSE × (HENRYI × BROWNI CHLORASTER).

[SEE SUPPLEMENTARY ILLUSTRATION.]

A HYBRID Lily of more than ordinary promise has been raised at Kew, by crossing a form of *L. Browni* with *L. Henryi*. The cross was made in July, 1897, and the hybrid flowered in July, 1900. In habit, stature, foliage, size, and form of flower, and even in the bulb, the hybrid bears a remarkable resemblance to *L. auratum*. The colour of the flower is creamy buff, changing to almost pure white with age. Several of the plants bore flowers showing slight spotting at the base of the segments, and one, which grew in a sunny position in the open air, showed a tinge of rose outside the segments. The seedlings grew vigorously from the first, and there is every promise of their proving as strong in growth and constitution as *L. Henryi*. The bulbs which flowered were only as large as Walnuts; when they have had time to grow to full size they will probably produce stems and flowers far more striking than those of last year, represented in Mr. Worthington Smith's drawing. The suggestion has been made by Lily experts, that *L. auratum* is probably of hybrid origin, *L. speciosum* being one of its parents. It is difficult to believe that *L. auratum* was in Japan in Thunberg's time, when *L. longiflorum*, *L. speciosum*, *L. tigrinum*, and *L. Browni* (japonicum) were known. How collectors in Japan a century ago can have overlooked such a plant as *L. auratum*, with its big flowers and penetrating odour, is not easily explained, unless we may assume that it did not then exist, and that it has been evolved since, either by nature or man. The history of *L. auratum* by a Japanese observer would be interesting. It was introduced into England about 1860 [by Mr. J. G. Veitch, who found it wild in mid-Japan. See *Gardeners' Chronicle*, July 12, 1862]. W. W.

FLORISTS' FLOWERS.

BORDER CHRYSANTHEMUMS.

AMATEUR cultivators and cottagers not possessing glass-houses should cultivate the border varieties, which are fast gaining in favour. The mild weather experienced last autumn showed their usefulness, and the flowers do not seem to suffer harm from dew, fog, or heavy rain. They are capital town plants, and just the thing to brighten with a bit of colour the grimy forecourts and back gardens of

suburban residences. The varieties have been so much improved in colour that they include almost all the colours found in the other sections.

The cultural details are simplicity itself. Plants having been obtained, they should be lifted annually when flowering is past—not for the sake of preserving the roots from frost, but to ensure success by raising a new stock of plants, as it were. At this operation the stems should be cut down close to the ground, and the roots dug up and packed close together in a cold frame, placing some sandy soil between the clumps. If a frame is not available, the ground at the foot of a south wall will answer as well if a thick mulch of partly-decayed leaves be put over the roots.

Early in the month of March the roots should be divided, and every piece having a root should be planted out if the stock is to be increased, otherwise pieces possessing several shoots and numerous roots are preferable. The small bits with roots should be put into sandy soil in an ordinary cutting-box or in a cold frame at 2 inches apart, the frame kept close for a few days, then air admitted by degrees, and finally in a fortnight the lights drawn off in favourable weather.

Cuttings of the plants root readily in sandy soil in a cold frame if inserted in the present month. When a cutting is rooted nip out the point, and afterwards let the plant grow without further stopping. Before planting, the soil should be trenched, and unless it is very poor no manure should be added, a very luxuriant growth being inimical to fine flowering; and the best results are obtained from well matured shoots. Liquid-manure, or a mulch of half-decayed horse or cow-manure, give the best results. Varieties that make strong growth should not be planted closer than a yard apart, the weaker growers at 2 feet. If grown in the open border, the plants should be supported by neat sticks, and bands of matting; and if against walls, they should be loosely slung up with tarred string or matting.

Of varieties I may name Arthur Crepy, G. Wermig, Clinton Chalfont, Emily Grunerwald, Golden Queen of the Earlies, Madame Liger Ligereau, and October Yellow, all yellow. Barbara Forbes, Gladys Roult, La Vierge, May Mauser, Market White, Mytchett White, Queen of the Earlies, Sœur Melaine, Lady Fitzwigram, and Madame Desgranges, white; other colours are represented by Comtesse Fouchier de Cariel, bronze; Ryecroft Glory, orange-yellow, suffused with bronze; Mrs. Gifford, silvery-pink; Roi des Précoces, deep dark crimson; Madame Eulalie Morel, cerise-golden reverse; Montague, rich purple-crimson; Marie, mauve; Harvest Home, red, gold tipped; Alexander Dufour, rosy-purple; Crimson Pride, deep crimson; Ivy Stark, deep orange, shaded terra-cotta; Feu de Bengale, orange, flushed red; Madame Louis Lionnet, pink; Madame G. Menier, crimson Amaranth; Marquise de Montmort, bright mauve-pink; and O. J. Quintus, rose-pink. E. M.

IMPATIENS GRANDIFLORA,

HEMSLEY, N. SP.

The genus *Impatiens*, already so well known in gardens, is now still further enriched by the addition of *I. grandiflora* from Madagascar. Last year a few plants were introduced to Kew by Mr. Warpur, and this year they have produced the first flowers in a cultivated state. Another importation of the plants has been made this year, so that we may soon see them fairly well distributed throughout the country. The accompanying illustration (fig. 47) was made from a plant that flowered in Silverhall Nursery, Isleworth, last November, but according to the collector, the blossoms are twice as large in a state of Nature as those represented. It should be mentioned that in the August number of the *Icones Plantarum*, t. 2655, this species was described for the first time by Mr. Hemsley. A drawing is given, but its flowers do not agree very well with those in the annexed illustration, being probably made from

dried specimens. The fresh flowers are produced singly, the axils of the upper leaves are bright deep rose, the petals being conspicuously blotched with deep blood red, the upper petal alone being

margins, and stalked glands at the base and on the petioles. They are deep shining green above, and somewhat bullate or wrinkled owing to shallow depressions or "lacunæ" over the surface.

its terrestrial nourishment from the decayed leaves on the surface of the soil. Owing to the great height of the stems, they naturally topple over, and when lying on the ground emit roots and shoots from the joints, many of which become swollen. By this means one plant is enabled to throw up numerous secondary shoots, and when these are in flower in July and August they present a magnificent sight.

There is no doubt, the plant, if treated to plenty of leaf-soil and atmospheric moisture and not too much heat, will grow readily in English gardens. To prevent the stems attaining a great height, it would probably be as well to pinch out the tips of all the main shoots so as to develop as dwarf and bushy a habit as possible. As all the natural surroundings, however, cannot be imitated at once, it will probably require some little experience under different conditions before the best one for the plant is discovered in this country. *J. Weathers, Isleworth.*

HYBRIDISATION IN AMARYLLIÆ.

(Concluded from p. 90.)

ATTEMPTS AT RAISING INTER-SPECIFIC HYBRIDS AT ISLEWORTH.—A bare record of the few successes that have attended efforts at hybridisation give no idea of the totality of effort required to produce even such meagre results. I have therefore tabulated a few of the crosses which I have attempted, and which were registered at the time. These do not represent one half of the attempts I have made, because no register was kept, except in cases in which the swelling fruit gave promise of seed, and in hundreds of cases this did not occur. I have also practically eliminated the huge record of generic crosses attempted, none of which have, up to the present succeeded beyond possibility of dispute. I have defined for these purposes "a species" to be a collection of individuals bearing evidence of a common parentage, in which all the important and easily recognisable attributes of the inflorescence and seeds are fixed, and which reproduce such characters in their seed progeny.

Variations in the leaves or in the colour or markings of the flowers constitute varieties.

A specific hybrid, therefore, in my view, must differ specifically from the female parent.

A varietal divergence is not enough to prove hybridisation, as self-fertilised seedlings of many true species will show varietal divergence from the type in perhaps one per cent. to five per cent. of the seedlings.

In many cases where seeds have been raised after attempted hybridisation, sufficient time has not elapsed for them to flower; in other cases they have flowered and shown no specific divergence from the female type.

In the former case SMALL CAPITALS indicate the supposed male parent; in the latter case *italics* are used in the subjoined tabular matter; and ordinary type indicates that no fertile seed was formed.

The total of results gives 159 registered attempts, of which 146 are absolute failures, and thirteen possible successes. Of these thirteen, I had hopes of success in three cases, and have undoubtedly succeeded in one case.

On this analysis it would appear, on the one hand, that the chances of really effecting hybridisation is at the most not more than about two per cent., perhaps not more than 0.6 per cent.; and, by including unregistered attempts, these figures would be halved.

On the other hand, it should not be overlooked that my object throughout was not to register the correct percentage of possible hybrids between all the species in any genus, but rather to raise hybrids between species so far removed from each other as to make any offspring possess horticultural merit. In short, my aim was to do the difficult thing rather than the obvious.



FIG. 47.—IMPATIENS GRANDIFLORA. (SEE P. 110.)

unspotted. The lower sepal has the form of an ovate-scoop, white in colour, netted with deep purple-red, and produced behind into a slender curved spur $1\frac{1}{2}$ to 2 inches long. The leaves are oblong-danceolate, tapering to a point, with crenate-serrate

In Madagascar this species attains a height of 4 to 5 feet. It grows at an elevation of over 1,200 feet in the shade of the forests, and under very moist conditions in the atmosphere. It is a very shallow-rooting plant, so says Mr. Warpur, and derives all

A FEW INTER-GENERIC CROSSES ATTEMPTED.

Vallota × *Gastronema sanguineum* (died after germination).

SPREKELIA × HIPPEASTRUM.

Sprekelia × *H. rutilum* (2), × *H. equestre* (2), × *H. procerum* (discontinued efforts, as plant never carries seeds with me. It is recorded to have once carried seed in Col. Trevor Clarke's garden).

Brunsvigia Josephinae × *Vallota* (died after germination).

Amaryllis × *LYCORIS SQUAMIGERA* (3).

Inter-Specific Fertilisations.

HIPPEASTRUM, ZEPHYRANTHES, AND SPREKELIA.

H. rutilum × *equestre* (2), × *Sprekelia* (4), × *vittatum* (died), × *Z. brachyandrum*, × *SOLANDRIFLORUM* (2). (*Rutilum* carries seed freely on its own or mongrel pollen.)

H. procerum × *aulicum* (2), × *Sprekelia* (carries seed on its own pollen).

H. equestre × *rutilum* × *Sprekelia* (2), × *vittatum* × *solandriflorum* × *Z. Andersoni* (carries seed freely with mongrel pollen).

H. reginae × *solandriflorum* × *Z. brachyandra*.

H. stylosum × *SOLANDRIFLORUM*.

H. tricholepis × *vittatum* (2), × *rutilum* × *Sprekelia*.

H. vittatum × *EQUESTRE* × *Z. candida* (seeds freely on its own pollen).

H. organense × *Z. brachyandra*.

H. alicum × *VITTATUM* (4), × *Z. candida* (2), × *rutilum* × *procerum* (2), (seeds freely on its own or mongrel pollen).

Habranthus advenum × *Hip. alicum* (never set seed).

CRINUMS.

C. Moorei × *scabrum* × *odorum* (13), × *fimbriatulum* (3), × *CAMPANULATUM* × *zeylanicum* × *amabile* (8) (seeds freely on its own pollen).

C. scabrum × *MOOREI* (hybrid raised) (seeds on its own pollen).

C. odorum × *Moorei* (23), (never carries seed).

C. amabile × *Moorei* (3), × *giganteum* (2).

C. fimbriatulum × *Moorei* (2).

C. giganteum × *zeylanicum* (5), × *odorum* (4), × *Moorei* (2), × *amabile* (3).

C. zeylanicum × *giganteum* × *Moorei* (2), (never seeds with me).

C. purpurascens × *Moorei* (6), × *amabile* × *giganteum* (never seeds).

PANCRA TIE.

Ismene calathina × *ELISENA*.

Elisena × *CALATHINA* × *Moritziana* (3).

Hymenocallis speciosa × *calathina*.

Eucharis Lehmanni × *GRANDIFLORA* (seeds freely on its own pollen).

E. Sanderi × *Lehmanni* (2), (never seeds).

ZEPHYRANTHES.

Zephyranthes brachyandra × *H. rutilum*, × *H. alicum* (2), × *Hippeastrum sp.* (2), × *SPREKELIA* (2), × *Z. CANDIDA* (2), × *PLACEA ORNATA* (4), × *LYCORIS SQUAMIGERA*.

Z. rosea × *H. alicum* × *H. reginae* (2), (seeds on its own pollen).

Z. carinata × *H. alicum* (never seeds).

Z. gracifolia × *H. vittatum* (seeds on its own pollen).

NOTE.—The figures in parentheses show the number of times that particular cross was attempted. *A. Worsley, Jan., 1901.*

Obituary.

JOHN HENRY MASON.—We learn with regret of the death of Mr. John Mason, on February 7, at the age of sixty-five years. The deceased, who was well-known and respected, was for thirty-five years superintendent of Princes Park, Liverpool. He was a practical as well as a scientific horticulturist, and an excellent landscape gardener, whose services in this line were much sought after. The interment took place at Southdown Road Cemetery on the 11th inst., attended by a great number of friends.

RICHARD SMITH-CARINGTON, J.P.—We much regret to announce the death, on the 9th inst., of Mr. Smith-Carington, senior partner in the business of Messrs Richard Smith & Co., seedsmen and nurserymen of Worcester, which was established in 1804. Deceased, who was seventy-six years of age, lived at Ashby Folville Manor, Melton Mowbray, and was High Sheriff of the county of Leicestershire. The funeral took place on Thursday last at Ashby Folville.

MRS. CYPHER.—We regret to announce the death of Mrs. Jane Cypher, the wife of Councillor J. Cypher, of Cheltenham, on the 7th inst., aged seventy-two years. The funeral took place on Monday last.

HOME CORRESPONDENCE.

ROSES AND ST. GEORGE'S DAY.—Will you kindly permit me, on behalf of the committee of the Society of St. George, to express the hope that Rose growers generally will endeavour to provide for the large demand for red and white Roses which it is hoped and believed will be made on the forthcoming St. George's Day—April 23. Our honorary Secretary, Mr. Howard Ruff, 241, Shaftesbury Avenue, Bloomsbury, will be pleased to give any information to applicants as to the patriotic objects of the Society. *Francis Geo. Heath.*

GREENING POTATO-SETS.—The advocates of the greening of Potato-sets were once more common than at present; still, the number of those who follow the practice is not so small as "D." would have us believe. The last time I put it into practice impressed itself on my memory to a degree that will not readily be erased. Following the customary method, I placed the sets of early varieties on sheep-hurdles, and left them undisturbed for several days, but was much chagrined to find them showing signs of the disease, which became so virulent that almost all my stock of sets was lost; although at lifting time they were not diseased, which early lifting usually ensures. Since that year I never left my early Potato-sets for even an hour longer than I could help in the open air, but spread them out on the floor of the fruit-room. Sets of late Potatoes I put into clamps, which are not soiled over for some time, but are covered with straw-litter; and if rain threatens, a waterproof cloth is thrown over the clamps. The Potatoes winter well in clamps, and before they shoot much they are spread out thinly in a frost-free place till planting time arrives. It is quite true, as Mr. Molyneux says, that greened tubers are not supplied by the seedsmen, and as such seed usually give heavy crops, the so-called advantages of the practice of greening are absolutely lacking. If the gain from greening is so slight there is no reason in making additional work when lifting the crop. Nor do I find any advantage in arranging the sets with the end in which are the eyes uppermost in boxes, and placing these in the light before planting them. They come up quite early enough treated in a less troublesome manner. They should be kept in a cool place certainly, in order to check growth before they are planted, but an ordinary lighted room is suitable enough. *W. S.*

CORDYLIN INDIVISA VERA AND C. BANKSII.—At Castlewellan both of these plants are grown in close proximity to each other, and they are so distinct from each other in habit and growth, that a casual observer can see at a glance the great difference between them. I have not seen them flower, but as a foliage plant *C. indivisa* is certainly the most distinct. Mr. Dorrien Smith, of Trecco Abbey, Scilly, sent some seeds of *Cordylina indivisa* to Lord Annesley which failed to grow, although they were sown with the greatest care, and placed in a house having a temperature of about 55°. Probably the seeds were fertile, but through our ignorance they were treated wrongly. In the spring of 1897 Mr. Burbidge, of Trinity College Gardens, Dublin, sent some more seeds of *C. indivisa vera* to Lord Annesley, and from that seed there were raised about two dozen plants; and in a note I had from Mr. Burbidge afterwards, he said it "was the first time it had been raised in Europe since Lee, of Hammersmith, raised a few seedlings in 1857, or thereabouts." The seeds took over three months to vegetate. They were sown in a pan, and placed in a cold frame, with air on night and day, and kept absolutely dry. The first pair of seedlings that appeared were of a bluish-

green colour, and were flagging with drought; and in a couple of days later there was a nice braird, and all lay flat on the soil for the lack of moisture—and in a rash moment we took the seed-pan to a tank of water and let the soil soak from the bottom upwards. When we looked in at the seed-pan in a couple of days after, the seedlings looked healthy enough, but the remainder of the unvegetated seeds were in a state of decay. Had we but had patience for only a little longer, we might have had a hundred or two of plants instead of a couple of dozen. A neighbour of mine, who attended most of the flower shows in Ireland and Scotland forty or fifty years ago, tells me that *Cordylina indivisa* was plentiful then, as it was exhibited in nearly every collection of stove and greenhouse plants. I would not be surprised to hear that specimens are to be found planted out in different parts of Ireland. Two years ago, I heard that there was a very fine plant, with several stems about 5 feet in height, in a garden in the County Donegal. *T. Ryan, The Gardens, Castlewellan, Co. Down.* [Mr. Ryan kindly sent leaves of *Cordylina indivisa vera*, which were narrowly lanceolate-acute, 4 inches across, dark green above, midrib and secondary nerves orange, under-surface glaucous, with orange nerves. The leaves of *Cordylina Banksii* were linear-lanceolate, tapering to the base, 2½ inches across at the widest part, dark green, with the midrib whitish, paler green on the under-surface. *Ed.*]

NEWTON WONDER APPLE.—In your issue of the *Gardeners' Chronicle*, February 2, I find a letter from Mr. Pearson, relating to the Apple Newton Wonder, in which Mr. Pearson says when he saw Mr. Taylor about buying stock, others were good enough to inform Mr. Pearson that the mother tree was growing in the garden. Now this information I am in a position to contradict, as I remember, and very well too, this tree being in a flower-pot at Mr. Taylor's back door; and in 1875 the thatch was removed from the house, and at that time it was quite a small tree, and had been planted nearer the house than where it now stands, and it was in that year replanted in its present position. Mr. Taylor has always adhered to the statement that it sprang from a Blenheim Orange Pippin, and the pollen parent being Normanton Wonder. As Mr. Pearson says, the memory is apt to be treacherous, and it is probable it is so in Mr. Pearson's case. I think there is no doubt it is the best long-keeping Apple in cultivation. *Thomas-Salsbury, King's Newton, Derby.*

MARKET FRUIT GROWING.—Your correspondent "A." in reply to my remarks on the above subject seems to have missed my point. I did not say that all our nurseries are carried on in a slovenly style, but that a large majority are, and I still say the same. My remarks were not founded on what I may have seen at one nursery, but were the result of what I have seen during the few years I have spent in the business in three different centres of the industry. Perhaps some of your readers will give us their opinions on the subject. *C. M. A.*

THE PRICE OF GRAPES.—With coal at the present high prices, labour dearer than ever, and all our produce, but notably Grapes, selling to the retailers at cheaper rates, how are we producers to live or to make both ends meet? I am led to ask the Editor of the *Gardeners' Chronicle* to publish this letter because, although we are obtaining worse prices every year, the public do not get the advantage. If they did, we should have less occasion to complain. I was in conversation a day or two ago with a gentleman who is in the habit of buying Grapes regularly for his own table, and he assured me he had paid six shillings a pound for the last month to a leading fruiterer in the town near which I live. Now, I happen to know that the same fruiterer was only paying 1s. 4d. per lb. for the best Grapes he had in his shop. I also know that during the summer and autumn he bought my Grapes—Black Hamburgh at 1s., and sold at 1s. 9d., and best Muscats at 1s. 9d., which he sold at 3s. 6d. and 4s. I was also doing business a short time ago with one of the leading salesmen in a large market, who complained sadly of the self-same thing; while he could only get 1s. 4d. for the best samples of Gros Colman, the shopkeepers ticketed them at half-a-crown. It is too bad that we growers should be working hard and anxiously, and, instead of making any headway ourselves, we are putting money at the rate of 50 and 100 per cent. into the pockets of the retail fruiterers. They

will, perhaps, talk of waste and bad debts: but of the former I venture to say it is almost *nil*, for a judicious buyer knows very well the quantity he will be able to sell, and moreover can buy every morning if he likes; and of the bad debts, I do not see why we should pay them. We have bad debts of our own, and can find no one to pay them for us. If shopkeepers would be content with threepence a pound profit, it would pay them well—they would sell more grapes, and we should dispose of our produce within a reasonable time; the public would benefit by the increased production and reduced prices. I wish I could see a remedy, or hear some suggestions. Perhaps if the co-operative stores and the large grocers would take up this trade more than they do, it might bring about a change. Growers cannot get at the general public, but it is time this matter was ventilated in the Press. *Grape-grower.*

THE ROYAL HORTICULTURAL SOCIETY'S COMMITTEES AWARDS.—Occasionally of late the Fruit Committee's action in granting Awards of Merit, or of Certificates, to old fruits or old vegetables, has met with some strong animadversion, made generally under considerable misapprehension as to what the Committee's powers or limitations may be. Certainly there may have been in the wording of the Clause 13 in the regulations, published in the "Arrangements" for the current year, annually hitherto, that led to the assumption held by some of the Committee's critics, although such interpretation was not held by the committee. First, to draw attention to the regulation 13, as published in the arrangements for the present year of the Royal Horticultural Society, just issued, which shows that the Council, in the phraseology now employed, have fully endorsed the acts of the Fruit Committee in relation to these old things; and it is specially desirable such reference should be made just now, as at the recent meeting no fewer than four quite old Apples had Awards of Merit granted them, never having been previously so honoured; and at the preceding meeting in January some old Pears were similarly honoured. It is worthy of special mention that at that meeting the chairman, Mr. G. Bunyard, probably anticipating some renewal of the adverse criticism previously made, said that in granting awards to old fruits not previously honoured, "their object was to instruct the public as to what were really good for general cultivation." Apart from that, I may ask, why should any fruit or vegetable that has over many years proved to be exceptionally good and reliable, be refused the honour of an Award of Merit or a Certificate? whilst myriads of things absolutely untried, and which have, when first presented to be taken solely on the sender's recommendation as to cropping or general cultural excellence, get awards made to them freely, yet may later not be found in the slightest degree worthy. The alteration in the Clause 13 referred to is as follows: "The Committees will recommend awards to be made according to their merits to very superior seedlings or novelties, or to recently introduced, re-introduced, or very rare objects, or to highly decorative plants, or to other objects of great excellence which have hitherto been overlooked or ignored." It is this latter sentence which I have italicised which shows how fully the Council has justified the broad and liberal interpretation the Committee had previously put on their powers in relation to awards. It is now very obvious that adverse critics will henceforth fail to find in the regulations governing the actions of the Committee any ground for the position they have previously taken up. That they did so in the full belief they were right, no one need doubt; but the committee honestly differed. It does, of course, seem very odd that exception should be taken to the course now so clearly advised, because if there are any things which justify the granting of awards, it is when things have been well tried, and have proved to be excellent. I grant in making awards of this nature, they have no pecuniary value, but that seems to be, to my mind, a very special recommendation. I could wish that it were possible to utilise the Society's trial-garden for the purpose of testing the merits of so many things which come before the committees than is at present possible. For such a desideratum we must wait, evidently, until a new garden is furnished. But could such trial of two or three seasons' duration be provided, how many mistakes in award-making might doubtless be avoided! Of all the intentions of the Royal Horticultural Society, I think none calls for more prompt or decisive action than does the

provision of a really high-class garden, where trials may be conducted on the broadest and most satisfactory lines. *A. Dean.*

VENTILATING GLASS-HOUSES.—An admirable subject for a lecture at the Drill Hall would be "The principles of ventilation as applied to plant-houses." Specially would such a topic have interest because it has been preceded by the excellent and practical lecture on the "Heating of Glass-houses" which Mr. Mackenzie gave at a recent meeting. Certainly the subject of heating is of the very first importance, and is hardly secondary to that of the structure of glass-houses. Ventilation is necessarily a somewhat subsidiary matter, yet it is of great importance also. In relation to it Mr. Mackenzie in his lecture said very little, and I could but think he felt that in talking about it he was on contentious ground. His observations were limited to the remark that top and bottom ventilation was essential, but that the bottom openings should not allow a volume of cold air to impinge directly on to the plants, but rather should be lower, so that the incoming air should be warmed by passing close to the pipes. Now, whatever may be the nature of the plant-life in a house, especially if tender, it is so very obvious that were the atmosphere within heated some 15° to 20° higher than was the external air, that it would be folly to open side-ventilators in such a way that a rush of cold air could follow. Were the house a cold one, nearly approaching to the external temperature, then, were the side lights opened, no rush of cold air would follow. But if the ventilators be placed on the pipe-level, and the cold air that rushed in through the pipes 15° to 20° lower in temperature, then would the heat force of the pipes be materially checked, and the internal temperature be lowered. The question to be considered is, whether when internal and external temperatures vary so much as to create cold rushes or currents when ventilators are open, it is good practice to open the lower ones at all, seeing that if some top air be given, external air will enter from above, and will diffuse itself through the house without creating a cold current at all. It seems to be either unknown to greenhouse constructors of the professional order, or is overlooked, that vast numbers of greenhouses, and very long ones too, are now erected without any side ventilation. That is, of course, practice not according to the architectural Cocker, but it is so all the same, and in such houses almost everything grown under glass is so grown, the ventilation being furnished by the doors, by the laps—always a means of ventilation—and by the top ventilators. That in such houses all descriptions of plants and crops are produced in the most perfect condition, shows that after all side ventilation of a certain kind may after all be very much of a fetish. Probably the professional constructor would be shocked at the suggestion that houses can be efficiently ventilated without them. There is for dwelling-houses, offices, or other places where human beings live or labour, no better method of securing ample ventilation than that of admitting air externally low down, and compelling it to ascend within through pipes to a good height, and then permitting it to diffuse itself through the warmer air within. In that way the atmosphere is changed, and yet no cold current or draught is created. *A. D.*

SOCIETIES.

ROYAL HORTICULTURAL.

FEBRUARY 12.—The meeting on Tuesday last in the Drill Hall, Buckingham Gate, Westminster, signalled the commencement of the society's year; and the new committees, as revised for 1901-1902, sat for the first time. There was a much better display than there has yet been since the turn of the year, and though not full, the hall was furnished to a satisfactory degree.

Orchids were not shown very numerous, but the ORCHID COMMITTEE recommended several First-class Certificates and Awards of Merit to novelties.

THE FLORAL COMMITTEE had a number of groups before it, and recommended as many as eleven medals; but there were few novelties entered for Certificate or Award of Merit, and only one obtained such a distinction; this was a much-crested Pteris, from Mr. H. B. MAY. One of the prettiest groups was composed of plants of *Clematis indivisa* and the variety *lobata*, shown by Messrs. W. PAUL & SON, Waltham Cross Nurseries. Primulas were numerous, and the other groups included a variety of hardy flowering plants, some of which had been forced into flower.

THE FRUIT AND VEGETABLE COMMITTEE made no award to any particular variety of fruit, but the coveted distinction of a Gold Medal was recommended in respect to an exhibit of splendid Apples from Messrs. GOS BUNYARD & CO., Maidstone.

It being the occasion of the annual general meeting of Fellows, there was a larger attendance than usual, and at 2.30 p.m. the Drill Hall presented a scene of considerable animation.

Floral Committee.

Present: W. Marshall, Esq., Chairman; and Messrs. Chas. T. Drury, George Nicholson, H. B. May, J. Hudson, Charles Jeffries, R. Dean, G. Leuth, E. Molyneux, W. P. Thomson, W. Howe, J. F. McLeod, C. R. Fielder, J. Frazer, Charles Dixon, W. Bain, Chas. E. Pearson, George Gordon, Herbert J. Cutbush, H. J. Jones, W. J. James, E. T. Cook, E. H. Jenkins, and Owen Thomas.

J. C. ENO, Esq., Wood Hall, Dulwich (gr., Mr. R. B. Leach), showed a group of large plants of *Helleborus orientalis* varieties in pans, very finely flowered. They had been lifted about ten days ago and put into large pans, a little Ivy being pegged down over the surface of the soil.

MESSRS. JOHN LAING & SONS, Forest Hill Nurseries, London, sent a group of miscellaneous plants in pots. It included well-flowered plants of varieties of *Azalea indica*, also *Azalea*, *Palms*, *Cordylines*, *Codiaeums*, *Begonias*, &c. (Bronze Banksian Medal).

Ferns were shown by Messrs. J. HILL & SON, Bardonfield Nurseries, Lower Edmonton. There were fine specimens of *Gymnogramma schizophylla gloriosa*, *Davallia Griffithiana*, *Platynerium alcinorne*, *Asplenium caudatum*, *Polypodium irioides*, &c. Smaller plants of some tinted species, as *Lastrea erythrosora*, *Blechnum latifolium*, *Adiantum gracillimum*, *Blechnum occidentale*, were pretty; and *Selaginella Emiliana*, *Asplenium Hillii*, &c. (Silver-gilt Banksian Medal).

MR. JOHN R. BOX, West Wickham and Croydon, again made a display of Chinese Primroses, and showed a strain of uncommon merit. Wickham Beauty, a very large single pink-coloured variety, with prettily frimbriated petals was one of the best; but Box's Giant Pink, Giant White, Rosamond, a richly-coloured variety; The Kaiser, and Nube were very fine; as were Emperor and White Perfection; King of the Blues, a variety much more attractive than one named Wickham Blue. A few varieties of the "stellata" or "Lady" type were included (Silver Banksian Medal).

MESSRS. HEATH & SON, Cheltenham, exhibited a group of double-flowered Primulas of the old (Gilbert) strain, that need to be propagated by offsets. There were plants with pink, and others with purple flowers.

MESSRS. H. CANNELL & SONS, Swanley, Kent, exhibited a group of Chinese Primroses that fully furnished one side of a central table. The "Lady" strain was capitally shown in a large number of varieties, that afforded considerable variation in colour. Many of these varieties bore names, and amongst them the following were most attractive:—Queen Alexandra, white with light purple margins and yellow eye; dark foliage; Snow Wreath, white with yellow eye; Eucharis, Kenish Queen, white; Salmon Beauty, and several unnamed seedlings with coloured flowers. In addition to this display of the "Lady" type, there was a batch of florists' varieties, as Pink Perfection, Cannell's Pink, White Perfection, Queen of the Pinks, Princess, white with yellow eye; Swanley Giant, rich purple (Silver-gilt Flora Medal).

Clematis indivisa and the variety *lobata* was shown by Messrs. W. PAUL & SON, Waltham Cross, Herts, who had a group of plants in 6-inch pots. The plants were about a foot high, and trained to a single stake. Each of the specimens presented a grand show of the pretty white flowers, and the exhibit was not only one of the most conspicuous, but one of the most attractive groups in the Hall. The variety *lobata* has lobed leaves, but judging from Messrs. PAUL'S plants, it is not more decorative than the type, the flowers of which are a trifle larger in size (Silver gilt Flora Medal).

MESSRS. B. S. WILLIAMS & SON, Upper Holloway, London exhibited a group of forced shrubs, including *Malus floribunda*, a double-flowered Peach, *Pyrus Maulei*, *Staphylea colchica*, *Kerria japonica* fl. pl., *Clematis indivisa lobata*, and some Lilacs (Silver Banksian Medal).

MESSRS. PAUL & SON, The Old Nurseries, Cheshunt, exhibited a group of Lilacs in pots. We noticed the following varieties:—Marie Legraye, single white; Madame Camille Perrier, double white; alba grandiflora, Madame A. Chatenay, double white; and President Carnot, double, very pale lavender colour as shown. There were also flowering sprays of *Hamamelis arborea*, *H. Zuccariniana*, and *Corylopsis pauciflora*; Lady Battersea, a new H. T. Rose, colour rosy-crimson; and the variety Marechal Niel were represented by very fine blooms (Bronze Flora Medal).

MESSRS. JAS. VERNON & SONS, Royal Exotic Nurseries, King's Road, Chelsea, showed two plants of *Loropetalum chinense*, a hardy white-flowering shrub with strap-like petals. It has much decorative value, and was figured in

Gardeners' Chronicle, February 1, 1883, p. 152. Flowers of varieties of the greenhouse hybrid *Rhododendrons*, plants of *Ericum* Forbesii, and *Azalea indica* Kampeferi were likewise shown.

The new American Rose Queen of Edgeley, also called Pink American Beauty, was shown from the Floral Exchange, 335-336 Sixth Street, Philadelphia. This very fragrant and showy Rose was described in *Gardeners' Chronicle*, January 5, p. 2, from specimens sent to this office direct from America. Those at the Drill Hall, like our own specimens, were not in the best condition, the manner in which they were brought to this country having caused the flowers to shed at the least touch.

Messrs. WALLACE & Co., Kilnfield Nurseries, Colchester, exhibited *Iris Helderichi*.

From the Director of the Royal Gardens, Kew, was exhibited *Dracontium* (Godwinia) gigas, from Nicaragua, and figured in the *Gardeners' Chronicle*, January 18, 1873, pp. 72 and 73, from a specimen flowered by Mr. Bull, of Chelsea. The species had already been described in the *Gardeners' Chronicle*, February 27, 1869, by Dr. Seemann, who discovered and introduced specimens from the Chontales Mountains in Nicaragua. This extract from a letter of Dr. Seemann was copied from these pages by a multitude of papers, and *Punch*, referring to the discovery, suggested that the plant should be named after Gog and Magog. The species, however, was named after Mr. George Godwin, an eminent architect, but since it was figured in the *Gardeners' Chronicle*, its established affinity to the *Dracontiums* has necessitated its transference to that genus. A coloured illustration of the species was published in the *Journal of Botany* for 1869, p. 313, together with a fuller description of the plant by Dr. Seemann, who was at the time Editor of that journal. His description was reproduced in our columns in 1869, p. 1330. The plant is an Aroid, of the same habit as the *Amorphophallus*. The tubers weigh about 6 lb. each, and the leaf-stalk is 10 feet high; blade of leaf pinnatifid, and 10 feet in circumference. The whole of the petiole and leaf-blade was described by Dr. Seemann as 13 feet 8 inches.

Messrs. W. CUTBUSH & SON, Highgate, showed a group of *Crocuses* in pots. The varieties to the number of ten were chiefly novelties, and in colour varied from almost pure white to deep purple (Silver Banksian Medal).

Mr. T. S. WARE, Ltd., Hale Farm Nurseries, Feltham, had a considerable exhibit of hardy plants, many of them being alpine species. In flower were *Primula obconica*, *P. acaulis*, *P. Forbesii*, *P. verticillata*, *P. floribunda*, &c.; also *Hepatica cerulea*, Giant Snowdrops, &c. (Silver Flora Medal).

Messrs. BARR & SONS, King Street, Covent Garden, London, had an exhibit including cut flowers of varieties of *Helleborus*, also some *Narcissus* growing in Barr's prepared cocoa-fibre and charcoal, also others growing in pebbles and water. Early-flowering hardy plants included *Crocus Tommasinianus*, *Iris persica* Helderichi, *Cyclamen*, *Scilla bifolia*, *Muscari azureum*, *Galanthus Whittalli*, *G. Icaria*, &c.

PURNELL, PURNELL, Esq., The Woodlands, Streatham, made an extensive exhibit of *Narcissus* in pots. The plants were in 5 and 6 inch pots, and the display filled one half of one of the long central tables. The varieties included most sections of the genus, for we noticed yellow Trumpet, and bicolor Trumpet varieties, *N. poeticus ornatus*; also Minnie Hume Princess Ida, &c. The flowers were of good size, substance, and colour for the present date of season (Silver-gilt Flora Medal).

Messrs. JACKMAN & SON, Woking, were awarded a Bronze Banksian Medal for a group of forced Daffodils, Tree Peonies, &c. *Daphne Blagayana* was shown in bloom.

Award of Merit.

Pteris cretica albo-lineata Alexandrae.—A variety with very heavy and broad crest, and unusually conspicuous white variegation. From Mr. H. B. MAY, Dyson's Road Nurseries, Upper Edmonton.

Orchid Committee.

Present:—Harry J. Veitch, Esq., in the chair, and Messrs. Jas. O'Brien (hon. sec.), H. Ballantine, F. J. Thorne, H. J. Chapman, W. H. Young, J. W. Potter, T. W. Bond, E. Hill, F. A. Rehder, H. A. Tracy, W. Cobb, J. Douglas, C. J. Lucas, and J. W. Odell.

Notwithstanding the cold weather, a very interesting display of Orchids was made. GEORGE SINGER, Esq., Coundon Court, Coventry (gr., Mr. Collier), staged a small collection of finely grown Orchids, the central plant of which was *Odontoglossum* \times *lochristiense* *Coundonense*, a fine natural hybrid, with bright yellow flowers richly blotched with red-brown. The well-grown specimen had a very strong spike of seventeen flowers and buds (see Awards). Also included were the beautiful *Cypripedium* \times *Surprise* (Sallierii *Hyeanum* \times *Spicerianum*), Certificated to M. Jules Hye, February 28, 1899; the fine *C.* \times T. W. Bond, Coundon Court variety; the dark-coloured *C.* \times *Godseffianum* var. *Emperor* (Boxalli *atratum* \times *hirsutissimum*), *C.* \times *Preweti*, *C.* \times *Swinburnei* *magnificum*, *C.* \times *Muriel* Hollington, and a very fine *Phalenopsis Sanderiana*.

Messrs. F. SANDER & Co., St. Albans, showed varieties of *Laelia pumila*, including the original form of *L. p. prestantis* from the Luddemall collection, and *L. prestantis* Queen Alexandra, a charming white variety, with slate-blue front to the labellum, margined with white, and with a white central line; also the rare (*Cypripedium* *callosum* *Sanderæ*), and the very dark-coloured *C. Boxalli* Prince de Galles.

H. T. PITT, Esq., Rosslyn, Stamford Hill (gr., Mr. Thurgood), sent two specimens of *Cypripedium* *Pitcherianum*, Williams' var., showing interesting variation in different directions towards the two parents.

JEREMIAH COLMAN, Esq., Gatton Park (gr., Mr. P. W. Bond), sent a fine specimen of *Zygopetalum Mackayi* with four spikes, and another of *Z. M.* "Gatton Park variety," which had a white labellum with a few violet markings. Mr. COLMAN also showed *Cypripedium* \times *Hera* "Gatton Park variety," very good in form; and *Dendrobium* *Juno* *grandiflorum*.

Sir W. D. FEARSON, Bart., M.P., Crawley (gr., Mr. Wadda), showed a three-flowered inflorescence of a good form of *Cattleya Trianaei*.

JOHN RUTHERFORD, Esq., Beardwood, Blackburn (gr., Mr. Lupton), sent *Odontoglossum* \times *Adrianæ* *regale*, white, with dark purple spots; and *O.* \times A "Beardwood variety," with fewer and lighter spots.

WALTER COBE, Esq., Dulcote, Tunbridge Wells, showed *Cypripedium* \times *Schlesingerianum* var. "Bassano," a grand form of the *C. Mons. de Curte* class.

Messrs. HUGH LOW & Co., Bushill Park, sent *Cypripedium callosum* *giganteum*, with very large dorsal sepal; and *Cattleya Trianaei* "Titania," a pretty form with slate-purple colouring on the lip.

DE B. CRAWSHAY, Esq., Rosefield, Sevenoaks, showed *Odontoglossum Rossi* "Queen Alexandra," a handsome dark coloured form, with rosy-lilac tinge on the petals and lip.

G. F. MOORE, Esq., Chardwar, Bourton-on-the-Water (gr., Mr. Morris), sent flowers of the fine *Cypripedium* \times *Beckemanni*; and a grand form of *Cattleya Percivaliana*, having a lip with a dark orange centre.

Messrs. B. S. WILLIAMS & SON, Holloway, staged a group of *Lycaste Skinneri*, including the best form of *L. S. alba*, and *L. lasioglossa*; *Dendrobium* \times *Burfordiense*, and hybrid *Cypripediums*.

Messrs. HEATH & SON, Cheltenham, showed a small group of hybrid *Cypripediums*, the best of which was *C.* \times (*Leeanum* \times *villosum*), *Oncidium maculatum*, several *Laelia Jongheana*, &c.

Sir FREDERICK WIGAN, Bart., showed his fine rose-purple form of *Phalenopsis Sanderiana*.

Awards.

Angraecum hyaloides, from JEREMIAH COLMAN, Esq., Gatton Park (gr., Mr. W. P. Bond).—A small species with ascending racemes of small white flowers (Botanical Certificate).

Cypripedium \times T. W. Bond, Coundon Court variety (*C. Swinburnei* \times *hirsutissimum*), from GEORGE SINGER, Esq., Coventry (gr., Mr. Collier). A noble flower, with white margin to the upper sepal, the lower having dark chocolate markings on the greenish base. Petals bearing small blackish spots on greenish ground on the inner half, and tinged with rose on the outer half, lip tinged with rose on a whitish ground (Award of Merit).

Dendrobium \times *Wiganianum* (*nobile* \times *Hildebrandi*), from Sir FREDERICK WIGAN, Bart. (gr., Mr. W. H. Young).—A pretty flower, intermediate in character between the two parents (see p. 102) (Award of Merit).

Eulophia pulchra, from H. T. PITT, Esq. (gr., Mr. Thurgood).—Flowers whitish, with purple veining on the side lobes of the lip.

Odontoglossum \times *lochristiense* *Rochfordianum*, from Mr. T. ROCHFORD, Turnford Hall, Broxbourne. A grand form of the natural hybrid of *O. triumphans* \times *O. crispum*, which, in the broad sepals and thick substance, plainly indicates *O. triumphans*. The fine flower was of bright yellow, with heavy chestnut-coloured blotches on the sepals, and smaller ones on the petals and lip, the central area of petals being white, and the front lobe of the lip also white with reddish spots (First-class Certificate).

Odontoglossum \times *lochristiense* *Coundonense*, from GEORGE SINGER, Esq., Coundon Court, Coventry (gr., Mr. Collier). A very elegant variety, with attractive flowers, the petals of which were finely fringed. The petals had a basal area of white, the remainder like the sepals, yellow, with bright red-brown blotches. Lip white, with yellow crest and red-brown blotches. The finely-grown plant bore a spike of seventeen flowers (Award of Merit).

Fruit and Vegetable Committee.

Present: George Bunyard, Esq. (Chairman), and Messrs. H. Esling, W. Farr, Geo. Kelf, S. Mortimer, Alex. Dean, C. Herrin, W. Pope, H. Markham, J. H. Veitch, John Basham, A. Ward, Geo. Wythes, F. Q. Lane, H. Balderson, A. H. Pearson, W. Wilks, and J. Smith.

Mr. W. ROUPELL, Roupell Park, Brixton, S.W., showed nice fruits of Cox's Orange Pippin and Melon Apples in small wooden boxes, each fruit being wrapped in tissue-paper, and all of them packed in a suitable manner for transmission by post, so that no injury would be done them. These varieties are said to succeed in town gardens (Vote of Thanks).

Messrs. W. & J. BROWN, Peterborough, showed about six dozen good fruits of the fine market Apple Barnack Beauty (Vote of Thanks).

Mr. R. MAHER, gr., Yattendon Court, Newbury, showed fruits of Apples Dutch Migbonne and Court Perdu Plat, both of them first-rate varieties (Vote of Thanks).

The Rev. Ed. W. JONES, St. Mary's Vicarage, Spital Square, showed fruits of Apple Bray's Seedling.

A plant of *Vanilla planifolia*, bearing a few clusters of fruit was shown by Mr. Geo. Wythes, gr. to the Duke of Northumberland, Syon House, Brentford (Cultural Commendation). The fruits were produced by flowers pollinated in April last year. The growths had been trained on a wall trellis in a warm house, and were supported by stakes to facilitate removal to the Drill Hall. Fruits of *Vanilla* from Syon House were figured in the *Gardeners' Chronicle*, April 8, 1899.

Messrs. GEO. BUNYARD & Co., Royal Nurseries, Maidstone, exhibited a grand collection of Apples in about 100 dishes. The excellence and condition of these fruits was the subject of much remark, and the substantial award of a Gold Medal was recommended by the Fruit Committee. Some of the more prominent varieties were Golden Reinette, Hubbard's Pearmain, Gascoigne's Scarlet, Bietigheimer, Lane's Prince Albert, Sandringham, Cox's Pomona, Blenheim Orange, Beauty of Kent, Newton Wonder, Bismarck, Bramley's Seedling, Calville Malingre, Warner's King, Emperor Alexander, More de Ménage, Golden Noble, Striped Beeling, Tyler's Kernel, Cox's Orange Pippin, Kentish Fillbasket, Mannington Pearmain, and Cornish Aromatic (Gold Medal).

Messrs. J. CHEAL & SONS, Lowfield Nurseries, Crawley, made an exhibit of 100 dishes of Apples, in nice fresh condition. Some of the principal varieties we noticed included Hollandbury, Lane's Prince Albert, Newton Wonder, Lord Derby, Hoary Morning, Melon, Nancy Jackson, Bess Pool, Claygate Pearmain, Lady Henniker, and Cox's Orange Pippin (Silver Knightian Medal).

BECKENHAM HORTICULTURAL.

FEBRUARY 1.—Mr. F. G. Cogger gave a discourse on the cultivation of *Codiaeums* (Crotons), and giving his practices at "Elmside" with regard to the cultivation of these plants.

The next lecture will be given by Mr. H. Cooper, Chairman of the General Committee, on "Stoking: an experience of fifty years."

MEETING OF THE GHENT ROYAL AGRICULTURAL & BOTANICAL.

FEBRUARY 3.—At the meeting of the *Chambre Syndicale des Horticulteurs Belges Société Royale d'Agriculture et de Botanique* the following Awards were made:—

Certificate of Merit.—For *Oncidium crispum aureum*, from M. L. P. DE LANCHE VERAENE, of Brussels; for *Cypripedium nitens excelsior* (*Leeanum* \times *villosum*) (*à l'unanimité*); for *C. Leeanum superbum* \times *Boxalli*; for *C. Eilersianum*, and for *C. Mme. Fl. Stepmann* (*Leeanum* \times *villosum*), all these M. FL. STEPMAN, of Brussels. Also for *Anthurium Madame Dallière*, from M. LOUIS DE SMET (*par acclamation*); *Cypripedium Souvenir du Baron Osy*, from M. DE CHABRE LONGHÉ, of Brussels; *Odontoglossum Alexandræ*, from M. LOUIS DE SMET (*à l'unanimité*); *Cypripedium* hybrid *Leeanum* \times *Boxalli*, from the Société Anonyme Horticole "LA LYS," at Deynze (*à l'unanimité*); *Cypripedium Pauli*, from M. L. DRAPS-DOM, of Laeken, Brussels, for seedling *Cypripediums*, and for *Odontoglossum Alexandræ*, both from the last-named exhibitor.

A Cultural Certificate was awarded for *Odontoglossum Andersoni*, from MM. VERDONCK; Honourable Botanical Mention for *Peperomia* (species), also from MM. VERDONCK; and Honourable mention for flowering for *Odontoglossum grande*, from the Société Anonyme Horticole "LA LYS." Honourable Mention was awarded for a set of *Primula*, from M. F. VANDERBROEKEN DE BREYNE; *Cypripedium insigne montanum* \times *Boxalli atratum*, from M. FL. STEPMAN; a cut flower of *Laelio-Cattleya Binoti* (natural hybrid), *L. pumila* \times *C. bicolor*, from the Marquis DE WAVRIN; for *Cattleya Trianaei*, from the Société "LA LYS;" and for seedling *Cypripediums*, from M. L. DRAPS-DOM.

CROYDON AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT.

FEBRUARY 5.—The members of this society met at the Sunflower Hotel on the above date, Mr. W. J. SIMPSON in the chair, and the preliminary business having been disposed of, the chairman called upon Mr. W. Simpson, gr. at The Grange, Sutton, Surrey, who gave an interesting lecture on the propagation of the Vine and formation of Vine-borders. The lecturer was accorded a hearty vote of thanks.

The subject for the meeting on February 19 will be "Gloxinias." Attention was called to the proposed dinner

and social evening to be held on February 27 at the Greyhound Hotel, Croydon. A vote of thanks to the Chairman brought the meeting to a close.

SCOTTISH HORTICULTURAL ASSOCIATION.

FEBRUARY 5.—The monthly meeting of this Association was held on the above date at 5, St. Andrew Square, Edinburgh.

Mr. Todd, the Vice-President, was in the chair, and it was decided that a message of condolence with the Royal Family be sent, and a note of congratulation to King Edward on his accession to the throne.

Mr. Charles Comfort, the newly-elected President, then took the chair, and delivered an interesting inaugural address. He mentioned the remarkable changes and improvements which horticulture had undergone during the past century, and touched on the increased interest that was now shown in the subject by all classes. The standard of horticulture had been raised, and in the new century it would become more popular than ever, and attain to a yet higher state of perfection.

A paper on "The Gladiolus," by Mr. W. Kelway, Langport, Somerset, was read by the Secretary.

The usual votes of thanks were accorded at the close of the meeting. D. T. F.

DEVON AND EXETER GARDENERS'.

FEBRUARY 6.—The opening meeting of the spring season—postponed for a week until after the funeral of Her late Majesty the Queen—was held on the above date, when there was an excellent attendance of members.

Mr. John Coutts, gr. to Sir Thos. Acland, Bart., Killerton Park, read a paper on "Greenhouse Hardwooded Plants." Mr. Coutts, it may be mentioned, came from the Royal Gardens at Kew. The lecturer deplored that the increased demand for easily-grown cut flowers for decorative purposes had elbowed out of the way many valuable and beautiful hard-wooded plants. Amongst such plants were the hard-wooded Heaths, Leschenaultias, Pimeleas, Correaas, &c. The list of those generally grown early in the nineteenth century has become smaller in recent years, as may be seen on reference to the second edition of Aiton's *Hortus Kewensis* of 1810-13. Mr. Coutts gave instructions as to the propagation and cultivation of the best of the species, including Ericas, Epacris, Himalayan Rhododendrons, Azaleas, Acacias, Cytisus, Eriostemons, Croweas, Correaas, Coronilla, Leschenaultia, Chorozeas, Boronias, and Grevillea robusta.

CHESTER PAXTON.

"The Cultivation of the Vine in Houses Constructed for Plant Culture" was the subject dealt with at the usual fortnightly meeting held at the Grosvenor Museum on Saturday; Mr. John Jackson, gardener at Capenhurst Hall, being the lecturer. In the course of his address, Mr. Jackson dealt with the various phases of the cultivation of the Grape-Vine from the time of planting to the ripening of the fruit; and described in a lucid manner the results of his experience, extending over a period of twenty odd years. The troublesome insect and fungoid pests to which the Vine is subject were also included, and valuable hints as to exterminating and keeping them in check were given. A discussion, which was led off by the Chairman, Mr. John Weaver, followed the reading of the paper, and on the proposition of Mr. N. F. Barnes, seconded by Mr. Miln, a hearty vote of thanks was accorded to the lecturer. G. Milne.

WARGRAVE GARDENERS'.

At the last meeting of this Association, Mr. W. J. Fuller read a paper on "Potatos." He dealt most fully with the chemical composition and varieties of Potatos, the soil most suitable for growing them, their cultivation, manures, and the best time for applying them; the preparation of the sets, time and manner of planting, earthing-up, lifting, storing, and exhibiting. The Potato disease and remedies were referred to, and the different means of forcing Potatos mentioned.

A discussion took place, and a vote of thanks was accorded the reader for his useful paper.

There were some good exhibits of Primulas, Cyclamens, Apples, Arums, and Chrysanthemums. H. Coleby, Hon. Sec.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

THE monthly committee meeting was held at the Caledonian Hotel on Monday evening last, Mr. Thos. Winter in the Chair; and seventeen new members were elected. The actuary's report was read and approved. Mr. J. Clarke, of Taunton, asked to be allowed to withdraw a portion of deposit account, but it could not be allowed, Mr. Clarke being under seventy. Mr. G. Moulard, having reached seventy, and being unable to work, was allowed s. per week until the next meeting, inquiries to be made into his case. A vote of condolence to His Majesty King Edward VII. on the death of our late Sovereign, Queen Victoria, was passed, and will be sent at an early date. The treasurer was instructed to invest £650 in the best available stock. The annual meeting will take place on Monday evening, March 11, at 8 o'clock. H. C.

MARKETS.

COVENT GARDEN, FEBRUARY 14.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantums, p. doz.	5 0-7 0	Ferns, small, per	4 0-6 0
Arbor-vitæ, var., doz.	6 0-8 0	100	4 0-6 0
Aspidistras, p. doz.	18 0-36 0	Ficus elastica, each	1 0-7 6
— specimen, each	5 0-10 6	Foliage plants, var.,	
Cannas, per dozen	18 0—	each	1 0-5 0
Crotons, per doz.	18 0-30 0	Lily of Valley, each	1 9-3 0
Cyclamens, per doz.	8 0-10 0	Lycopodiums, per	
Dracenas, var., per		dozen	3 0-4 0
dozen	12 0-80 0	Marguerites, per	
— viridis, per doz.	9 0-18 0	dozen	8 0-12 0
Eriolas, var., per doz.	12 0-36 0	Myrtles, per dozen	6 0-9 0
Eoonymus, various,		Palms, various, ea.	1 0-15 0
per dozen	6 0-18 0	— specimens, each	21 0-68 0
Evergreens, var.,		Pelargoniums, scar-	
per dozen	4 0-18 0	let, per dozen	8 0-12 0
Ferns, in variety,		— Ivyleaf, per doz.	8 0-10 0
per dozen	4 0-18 0	Spiræas, per dozen	6 0-12 0

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Asparagus "Fern,"		Maidenhair Fern,	
bunch	1 0-2 0	per doz. bunches	4 0-8 0
Carnations, per doz.		Marguerites, p. doz.	
bunches	2 0-3 0	bunches	2 0-4 0
Cattleyas, per dozen	9 0-12 0	Mignonette, per doz.	
Eacharis, per dozen	2 0-4 0	bunches	4 0-6 0
Gardenias, per doz.	1 6-2 6	Odonoglossums, per	
Lilium Harrisii, per		dozen	6 0-9 0
dozen bunches	4 0-6 0	Roses, Tea, white,	
Lilium lancifolium		per dozen	1 0-3 0
album, per dozen		— Safrano, per	
bunches	1 6-3 0	dozen	1 0-2 0
Lilium rubrum, doz.	3 0-5 0	— Catherine Mer-	
Lilium longiflorum,		met, per dozen	3 0-6 0
per dozen	4 0-6 0	Smilax, per bunch	3 0-5 0
Lily of Valley, per		Tuberoses, per doz.	
doz. bunches	6 0-12 0	bunches	0 4-0 6

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, English,		Grapes, Almeira,	
per bushel		doz. lb.	5 0-7 0
cookers, large	3 0-5 0	— Belgian, lb.	0 5-1 0
various	2 0-4 6	Lemons, case	8 0-9 0
Blenheims, bush.	4 0-6 0	Lyches, new, pkt.	1 0—
— Nova Scotia,		Oranges, Navel	13 0-15 0
per barrel	12 0-18 0	— Bitter, case	8 0—
— Californian, per		— Blood	8 6—
box	0 0-10 0	— Murcia, case	6 6-7 0
Bananas, bunch	0 6-8 0	— Tangerine, box	0 6-1 3
loose, per doz.	1 0-1 6	— Jaffa, case	10 0—
Gobnuts, lb.	0 4—	— Valencia	11 0-14 0
Cranberries, case	16 0—	Pears, French stew-	
Chesnuts, Italian,		ing, crates	8 0-9 0
per bag	25 0—	— Californian East-	
Grapes, Alicante,		er Beurre, case	18 0—
per lb.	0 10-1 3	Pines, each	2 0-4 0
— Colmar, A.	1 9-2 0	Sapucaia nuts, lb.	1 3—
— Colmar, B.		Strawberries, per lb.	15 0-24 0
per lb.	0 9-1 3	Walnuts, cwt.	35 0—

VEGETABLES.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe,		Horseradish, for-	
per doz.	3 0—	eign, per bunch	0 9-1 0
— Jerusalem, sieve	0 9-1 0	— loose, per doz.	1 6—
— Stachys, per		Leks, per dozen	
Chinese, per lb.	0 5—	bunches	1 6—
Asparagus Sprue	0 7—	Lettuces, French	
— Paris Green, bun.	6 6—	Cabbage, doz.	1 0—
— home - grown,		Mint, per doz.	
per bundle	8 0—	bunches, new	6 0—
— Spanish, bundle	3 0—	Mushrooms, house,	
Beans, dwf. Madeira,		per lb.	0 8-0 10
per bkt.	3 0—	Onions, picklers,	
— Ch. Islds. and		per sieve	2 0-3 0
home, dwf.,		— per bag	3 0-4 6
new, per lb.	2 0—	— cases	8 0—
— French, dwf.,		— English, p. cwt.	5 0—
packets	1 0—	bag	1 0-2 0
Barb de Capucine	0 4—	Parsley, 12 bunches	
Beetroots, bushel	1 3-1 6	— per sieve	0 9-1 0
Beet, per dozen	0 6—	Parsnips, cwt. bags	2 0-2 6
Broccoli Sprouts,		Potatoes, per ton	85 0-125 0
bushel	0 9-1 0	— New, per cwt.	10 0-12 0
Brussel Sprouts, per		— New French, lb.	0 3—
sieve	0 9-1 6	— New France,	
Cabbage, tally	2 0-3 0	Channel Islds.,	
— dozen	0 9—	per lb.	0 4-0 6
Carrots, 12 bunches	1 6-2 0	Radishes, per 12	
— washed, in cwt.		bunches	2 3—
bags	2 0-2 6	Rhubarb, Yorks, doz	1 3-1 4
Cauliflowers, per		salad, small, pun-	
dozen	0 9-1 6	nets, per dozen	1 8—
— crate	4 0-5 6	Savoys, per doz.	0 6-1 0
— tally	3 6-7 0	— per tally	1 6-3 6
— Italian, basket	3 0—	Scotch Kale, bush.	1 0—
Celeriac, per dozen	2 0—	Seakale, doz punnets	12 0—
Celery, doz. bunches	10 0-15 0	Shallots, new, p. lb.	0 2—
— unwashed, doz.	8 0-10 0	Spinach, per bushel	3 0-4 0
Chicory, per lb.	0 3—	— French, crates	3 6-4 0
Cress, doz. punnets	1 6—	Salsify, bunch	0 4—
Cucumbers, doz.	8 0-12 0	Tomatoes, Canary	
Endive, new French,		deeps	2 0-3 0
per dozen	1 6—	— Turnips, per dozen	1 6-2 0
— Batavian, doz.	1 6—	— in bags	1 6-2 0
Garlic, new, lb.	0 2—	Turnip tops, bush.	1 0—
Horseradish, Eng-		Watercress, p. doz.	
lish, bundle	1 6-2 0	bunches	0 6-0 8

POTATOS.

Various sorts, 85s. to 105s. per ton; foreign bags, 50 kilo, 4s. to 5s.; Dunbar Main Crop, 120s. to 125s.; Up-to-Date, 125s.; seed Potatoes in variety, list on application. J. Bath, 32 & 34, Hillingdon Street, Covent Garden.

REMARKS.—The Cape fruit sales on Tuesday last realised as follows:—Peaches, per case, 21 to 25, 5s. to 8s.; Nectarines, per case, 30 to 35, 6s. to 8s.; Plums, per case, 1s. to 2s. 6d. These last were in bad condition. Rhubarb had advanced in price; green vegetables and roots remain at much the same prices as last week, and the supply is abundant.

SEEDS.

LONDON: February 12.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., state that there were but few buyers on to-day's market, with but a small business passing. German red Cloverseed is dearer, but second and low qualities of home-grown seed are easier. It is noteworthy that some American red is being reshipped from Hamburg to the United States. Alsike remains quiet, whilst there is no change in either Trefoil, Sanfon, or Timothy seeds. Full prices are asked for perennial and Italian Rye-grass. There is a good sale for spring Tares at full rates, and the market for Mustard and Rapeseed keeps strong. Birdseeds show this week no quotable variation. The wintry weather naturally hardens the value of Blue Peas, Haricot Beans, and German Lentils. The Board of Trade Returns give the imports of Clover and Grass seeds into the United Kingdom for last month as 37,701 cwt., value £83,343, as against 33,439 cwt., value £63,873, for January, 1900.

FRUIT AND VEGETABLES.

LIVERPOOL: February 13.—Wholesale Vegetable Market. Potatoes, per cwt.: Lynn Greys, 3s. 6d. to 4s.; Bruce, 3s. 9d. to 4s. 3d.; Up-to-Date, 3s. 6d. to 4s. 6d.; Main Crop, 4s. to 4s. 6d. do.; Turnips and Swedes, 1s. 2d. to 1s. 4d. per cwt.; Carrots, 2s. 3d. to 2s. 9d. do.; Onions, English, 5s. to 5s. 6d. do.; do., foreign, 8s. to 8s. 3d. do.; Parsley, 6d. to 8d. per dozen bunches; Cauliflowers, 1s. 2d. to 1s. 3d. per dozen; Cabbages, 4d. to 8d. do.; Celery, 6d. to 1s. 3d. do. St. John's Potatoes, 1s. 2d. per peck; do., new, 6d. per lb.; Grapes, English, 1s. 6d. to 2s. 6d. per lb.; do., foreign, 6d. to 8d. do.; Pineapples, English, 5s. each; Apples, 3d. to 4d. per lb.; Pears, 6d. do.; Tomatoes, 6d. do.; Asparagus, 1s. per bundle; Cucumbers, 1s. 3d. each; Mushrooms, 1s. 4d. per lb. Birkenhead Potatoes, 1s. to 1s. 2d. per peck; Grapes, English, 2s. to 4s. per lb.; do., foreign, 10d. do.; Mushrooms, 1s. to 1s. 6d. do.; Filberts, 10d. do.

GLASGOW: February 13.—The following are the averages of the prices recorded since our last report:—Apples, Canadian Kings, 18s. to 22s. per barrel; Baldwin's, Spies, Greenings, Russets, &c., 14s. to 20s.; Americans, various varieties, 13s. to 16s. 6d.; Maine and Boston, various varieties, 12s. to 16s.; Californian Newtown Pippins, 4s. 8s. to 8s. 6d. per case; 5s. 7s. to 7s. 6d. per case; Oranges, Valencia, ordinary, 420s. stamped paper, 8s. to 8s. 6d.; do., plain paper, 7s. to 7s. 9d.; large 420s. stamped paper, 9s. to 10s.; do., plain paper, 8s. 6d. to 9s.; extra large 420s. stamped papers, 10s. to 11s. 3d.; do., plain papers, 9s. 6d. to 10s. 6d.; large and extra large 714s. 12s. to 14s., all for sound fruit; Jaffa, 44s. and 152s. 9s. to 10s. per case; Malaga, bitter, half-case, 10s. 6d. to 11s. 6d.; Palermo do., 200s. 7s. 6d. to 8s. 6d.; do., 260s. 7s. to 7s. 6d. per case; Bananas, extras, 9s. to 10s. per bunch; No. 1, 6s. 6d. to 7s. 6d. do.; No. 2, 5s. to 6s. do.; Grapes, English, new, 1s. to 1s. 3d. per lb.; Mushrooms, 1s. to 1s. 3d. do.; Tomatoes, Canary deeps, finest medium, 8s. 6d. to 4s. per box; others, 2s. 6d. to 3s. do.; Onions, Valencia, 7s. 3d. to 7s. 9d. per case; 5s. 7s. 6d. to 8s. 3d. do.; Globes, 5s. 3d. to 5s. 6d. per bag.

CORN.

AVERAGE PRICES of British Corn (per imperial qr.), for the week ending February 11, and for the corresponding period of 1900, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1900.	1901.	Difference.
	s. d.	s. d.	s. d.
Wheat	25 10	26 8	+ 0 10
Barley	25 3	25 7	+ 0 4
Oats	16 5	17 7	+ 1 2

GARDENING APPOINTMENTS.

Mr. G. H. HODGSON, for the past twelve years Head Gardener to Wm. HORSNBY, Esq., Elsham House, Grantham, as Head Gardener at the Endcliffe Park and Woods, Sh. field; and Mr. F. TOWERS, lately Foreman at Elsham House, as Head Gardener to succeed Mr. Hodgson.

Mr. J. T. PARKINSON, for the last five-and-a-half years Foreman in the houses, Rushmore Gardens, Salisbury, as Head Gardener to Lady DALTON FITZGERALD, St. Leonard's Lodge, Clewer, Windsor.

Mr. A. OSBORN, as Head Gardener to Sir THOS. RICHARDSON, Kirklevington Grange, Yarm, Yorks.

Mr. WALTER BRADBROOK, for nearly three years as General Foreman in the Gardens, Rockingham, B. yle, Ireland, as Head Gardener to the Right Hon. The Countess of PORTLANDINGTON, Emo Park, Portlarning, Ireland.

Mr. W. ORLADE, General Foreman at Powerscourt Gardens, Co. Wicklow, as Gardener to Mrs. ROBERT, Oaklands, Co. Tipperary.

Mr. JOSEPH SHEN, as Gardener to GEO. H. HODGSON, Esq., Croft House, Southill, Batley, Yorkshire.

Mr. JOHN MACKAY, Sub-foreman in the Orchard Department, Royal Gardens, Kew, as Orchard Grower to the Right Hon. JOSEPH CHAMBERLAIN, M.P. High Wycombe, Birmingham.

TREES AND SHRUBS.

CHIMONANTHUS FRAGRANS.

LOVERS of fragrant flowers should find room in their gardens for *Chimonanthus fragrans*. The flowers of this plant are small and pendulous, with dirty white petals, the inside of which is purple. The shrub is deciduous, and its deliciously fragrant flowers appear during the early winter months. The propagation of the shrub is easily effected from seeds if sown as soon as they are ripe, or by layering in the autumn the suckers which spring up abundantly round the stem.

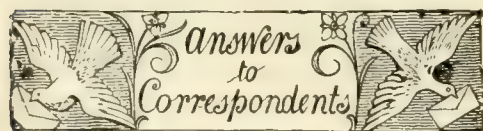
The best spot in which to plant is an open one against a south or western wall or trellis. An annual pruning should take place after flowering, and should consist of spurping back weak and superfluous shoots, and laying-in the stronger at full length. Quite young plants should have all of the strong shoots cut back one-half their length for two or three years. The form of training may be that known as the fan. *H. T. Martin, Stoneleigh Gardens, Warwickshire.*

CRATÆGUS PYRACANTHA VAR. LELANDI.

This beautiful evergreen thorn is not grown so much as it should be; in my opinion it only wants knowing a little more to be grown quite as plentifully as the common White Thorn or Quick (*C. oxyacantha*), which, I think, it might replace to some extent, even as a hedgerow plant. The branches are quite as strong and spiny as those of the White Thorn, qualities that go far to recommend it as a fence against cattle and horses. It is not fastidious as to soil, but like Thorns in general, it grows to the greatest perfection in a deep, rich loam, which of course it would have, under the usual preparation made for the common Quickset-hedge.

It is only as an ornamental hedge that *C. Lelandi* should be planted at first, and as experience was acquired, and confidence grew stronger, it could be moved further afield, and eventually, at no great distance of time, might, to some extent, replace the White Thorn; but the latter, being such a favourite with farmers, would take a long time to die out, so that many years might come and go before we would see the last of our beautiful and sweet-smelling May of the hedge-row. But whilst admitting the beauty and sweetness of its flower, the berries, though plentiful, useful for the food of birds, and for sowing, have nothing in their colour to recommend them. They are dull and sombre as compared to the bright vermilion colour of those of *C. Lelandi*, which are so charming that the introduction of this plant into our hedgerows would add another, and by no means, the least feature to our already lovely English lanes, and especially so to those of this loveliest of all parts of woody Warwickshire, the much admired by visitors and comers from all countries of the world.

There are in my grounds here plants of *C. Lelandi* 9 feet high, with strong straight stems, and all profusely laden with the lovely berries, presenting at the end of the year so charming a sight, that I feel sure, had Mr. Austin found such a plant in *Veronica's Garden*, it would have had honourable mention, together with perhaps some appropriate poetry. *W. Miller.*



BOOKS: *McIntyre, Callander.* You will find *Wm. H. Ablett's Arboriculture for Amateurs* of much use. It is published by Upcott Gill at the Bazaar office, 170, Strand, W.C. The book is illustrated, price 2s. 6d.

BONVARDIAS, RAISING FROM ROOTS: *J. W.* Having procured strong healthy plants, shake them out of the soil and remove the larger roots, cut these

into pieces of an inch or two in length, lay these in pans nearly filled with sandy loam and leaf-mould, cover with a layer half an inch thick of the same soil, and plunge in heat of 80°. If the soil is moist no water will be needed at first, and perhaps not at all till rooted. When top-growth shows, at which time the pieces will have begun to put forth feeders, pot off into thumbs singly, and set on the bed for a week, then remove to a less warm frame, and so on until fitted for warm greenhouse treatment in April. After May they may be plunged in a spent hotbed without glass covering, or they may be planted out, but the first method is the better.

CULINARY APPLES FOR MARKETING: *C. S.* To sell direct from the trees, Mr. G. Bunyard gives the following in his work, *Fruit Farming for Profit*:—Early Julien, Keswick Codlin, Pott's Seedling, Lord Suffield, Lord Grosvenor, New Hawthornden, Grenadier, Stirling Castle, Ecklinville Seedling, Cox's Pomona, Golden Spire, and Warner's King. Varieties to store:—Blenheim Orange Pippin, Small's Admirable, Peasegood's Nonsuch, Queen Caroline, Waltham Abbey, Wellington, Tower of Glamis, Golden Noble, Alfriston, Prince Bismarck, Winter Quoining, Winter Greening, Northern Greening, Annie Elizabeth, Lane's Prince Albert, Bramley's Seedling, and Prince Arthur. The bush trees may be set out at 6 feet apart, taking 1210 per acre, or 302 at 12 feet apart. There may be intercropping with Gooseberry and Currant bushes, or with Strawberries—the greater number when the Apple-bushes stand at 12 feet apart, and with better results. If Apple-bushes are planted at 6 feet apart, every alternate bush must be removed in a few years after planting, the bushes being planted elsewhere. Rows of a sort should be planted, the greater market favourites predominating.

CUPRESSUS LAWSONIANA AND C. PISIFERA: *X.* Yes; some of the forms are so much alike that they are difficult to distinguish without the cones, but if you compare the two side by side, you will find that the leaves of *pisifera* are flatter and more sharply pointed than those of *C. Lawsoniana*.

EMPLOYMENT IN PUBLIC PARKS AND GARDENS: *J. M. N.* You should apply to the curator of the particular park or garden in which you wish to obtain an appointment. At the Royal Gardens, Kew, they require that your age should be between twenty and twenty-five years, and you must show that you have had five years' experience in good gardens or nurseries.

GARDENERS' WAGES: *T. F.* We do not suppose that the mortgagee can be called on to pay the wages of any servants of the mortgagor. You would rather have to look to the latter.

HORTICULTURAL AND AGRICULTURAL JOURNALS: *Curieux.* You should apply to a home and foreign bookseller or newsagent. As for us to give you the names and addresses in this column of the better class of home and colonial journals, it would take more space than we can afford.

INSECT: *F. W., Suffolk.* The "rat-tailed maggot," from the decaying branch of an old Beech tree, is the larva of a species of *Eristalis*, of the order Diptera, which are met with occasionally in such situations. If we succeed in rearing the perfect insect, we shall be pleased to give a further account of the species.

INSECTS: *E. B., Kent.* A very late female of the mottled umber moth (*Hybernia defoliaria*). The caterpillars of this moth are sometimes injurious to fruit-trees.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to cons ult the following number.*—*G. T.* We cannot undertake to name varieties of Carnations.—*J. M. B.* *Odontoglossum* × *Andersonianum*. A very pretty form of it.—*J. G.* *Lælia pumila præstans* and *Calanthe Regnierii*.—*H. P.* *Cordylina australis*, often called *Dracæna australis*.—*Constant Reader.* The *Leeches*, a Chinese edible fruit. Other matter next week.—*S.* Send when in leaf.

NAMES OF FRUITS: *J. Milson.* Apple Dumelow's Seedling.—*W. H. H.* Herefordshire Costard.—*J. H.* 1, Winter Greening; 2, Minchull Crab; 3, Winter Hawthornden; 4, Dredge's Fame.—*H. W.* Baumann's Red Winter Reinette.—

W. O., Wilts. 1, Tower of Glamis; 2, Tom Patt; 3, Herefordshire Beefing; 4, Waltham Abbey Seedling; 5, Dumelow's Seedling.—*J. Howard.* 1, Scarlet Pearmain; 2, Golden Reinette.

OATS: *Ignoramus.* You will find your best returns by sowing some of the so-called pedigree varieties of Messrs. J. Carter & Co., of High Holborn; or of Messrs. Webb & Sons, Stourbridge. Thin sowing has a good deal to do with profitable returns from grain crops, farmers universally using too large a quantity of seed-corn. Oats are certainly not a necessity in the making of pure beer. They are given to horses, but are not usually given to other domestic animals.

ORCHIDS: *Crassinode.* *Chysis laevis* succeeds on wood-blocks, but still more so in baskets and pots in a compost of sphagnum-moss, peat, and crocks. Employ heat and moisture freely, and when growth is finished remove to a cooler house till growth begins anew, and then remove to the cooler part of the East Indian-house. During the resting season, the plant, like other varieties of *Chysis*, requires but little water.—*Dendrobium Cambridgeanum* (*ochreatum*): This should be grown in a basket with sphagnum-moss, and hung up to the roof; and like many other species of *Dendrobies*, it should be placed in the East Indian-house when making their growth. It is essential that *D. Cambridgeanum* should make strong pseudo-bulbs, and these should be well ripened. The plant requires in the growing season plenty of atmospheric and root moisture, and the compost never allowed to get dry. When growth ceases, remove to a cooler house, and afford very small quantities of root moisture, that is only sufficient to prevent the pseudo-bulbs from shrivelling. *D. Parishii*, a species from Moulmein, may be similarly cultivated; the species flowers in the spring.

PEACH SHOOTS: *F. H., Chesterfield.* The shoots being immature as regards the parts affected, have suffered from frost—a not uncommon occurrence in the cooler parts of the country. You will do well to plant your Peach, Nectarine, and Apricot trees only on south walls, not to crop over the roots; to plant shallow, use no mulch, and keep a loose, friable surface. By these means early maturity of the wood will be brought about, and the shoots will not get injured by frost, and will not gum.

QUASSIA-WATER: *F. J.* Soak 4 oz. of quassia-chips in 1 gallon of cold water for twelve hours, then bring the whole to the boil, and allow it to boil for ten minutes; strain off the water, and while hot add 4 oz. of soft soap, stirring it thoroughly.

SEAKALE: *J. M. B.* The system of forcing Seakale in the open ground as described in the *Gardeners' Chronicle*, December 1, 1900, p. 394, is doubtless a very satisfactory method, and the shoots so produced are more likely to be strong, crisp, and tender than when forced in a Mushroom-house, or similar structure, where sufficient attention is not given to keeping a moist atmosphere, and preventing an excessively high temperature. The strong, thick heads you send are sufficient proof that Seakale equal in all respects to that forced in the open ground may be cultivated from roots lifted and forced by means of a hot-bed. We note that your sets were planted in March last, lifted in December, and placed in a corner of the garden, from which roots are removed to the forcing-pit as required. Your pit has leaves around three sides and overhead, to the depth of 3 feet. Such conditions are much more suitable than those of a Mushroom-house.

COMMUNICATIONS RECEIVED.—*J. J. W.*—*A. W.*—*S. A.*—*A. F. P.*—*J. E. W.*—*J. Maers.*—*W. W.*—*E. C.*—*Wild Rose.*—*Rev. G. H.*—*R. P.*, Nice.—*D. R.*—*J. O'B.*—*F. B.*—*W. A. R.*, junior.—*R. Ashton.*—*Dr. Ramsay.*—*Torquay.*—*Dr. Dammer.*—*Berlin.*—*A. B. R.*—*F. A. C. C.*—*A. W.*—*H. H. R.*—*A. K. P.*, Nice.—*J. H.*—*Haarlem.*—*J. F. H.*—*H. R.*—*F. Henkel.*—*Darmstadt.*—*F. N. B.*—*L. Gentil.*—*C. B. P.*, next week.—*N. M.*—*J. H. V.*—*H. W. W.*—*J. Crook.*—*J. J. & Son.*—*Cirencester.*—*H. M.*—*J. C. W. & Son.*—*J. A. B.*—*A. H.*

SPECIMENS, PHOTOGRAPHS, ETC., RECEIVED WITH THANKS.—*F. H.*, Darmstadt.—*E. André*, Paris.

DIED.—We regret to learn of the death of *ANDREW MITCHELL*, partner in the firm of *Dobbie & Co.*, Rothesay, N.B., on Saturday evening, February 9.

(For Weather, see p. x.)



LILIUM KEWENSE. A HYBRID BETWEEN L. BROWNII CHLORASTER AND L. HENRYI.



THE Gardeners' Chronicle

No. 739.—SATURDAY, FEB. 23, 1901.

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SOME GARDENING FASHIONS OF THE LAST CENTURY.

ONE needs not stay to prove so palpable a fact as fashion in gardening, which some people are so severe as to hint is itself wholly a fashion!

During a long series of years the GRAPE-VINE of all fruits has been the most fashionable. A hundred years ago, however, it held a position secondary to the Pineapple, which was cultivated in all good gardens. While vineries were not at all common, skill in Pine growing was essential during the earlier years of the century; while at the same time the cultivation of Grapes was so little understood as to ignore the need of reducing the number of bunches, and thinning of berries was almost unknown. It would appear that Pine-pits were occasionally made to produce Grapes too, the Vines, planted outside, being brought in to fruit, one rod under each rafter, and this practice continued till the century was far advanced. A glance at the literature of the Grape-vine discovers the strangest diversities of opinion held at different times as to the best methods of cultivation. Take borders alone: We find they were composed of material in which dead animals formed an essential part. The opposite extreme was reached when an open material in which brick-bats and lime-rubbish were largely used. Then we find borders stratified on the flat and also

vertically! borders wholly inside or wholly outside, and at one time with frames constructed in front to protect the borders from inimical weather influences. There have been borders heated by means of underground pipes, and borders aerated by means of air-pipes and shafts, and each of these, be it observed, not the opinion of some solitary individual, but followed more or less closely by the whole body of gardeners. The care of the shoots has been also to a large extent subject to periodical changes, the fashion of the moment.

The MELON has always been a popular fruit, the fashion early in the century being to force it so early as to produce ripe fruits in April, not, be it observed, in properly-constructed houses, but in manure-heated frames. At that time it was the fashion to hold Melon feasts, at which prizes were awarded to those fruits possessed of the best flavour. That the demand for Melons was general is proved by the fact of some market gardeners near London requiring as many as 300 frames to meet the requirements of their business. By the "forties," however, the cultivation of Melons had diminished to a very great extent.

The APPLE may be named as another fruit that has been subject to the varying caprices of fashion. At no time has it been so popular as at present, but a hundred years ago it was a much-neglected fruit. At that time bush-trained trees began to replace the espaliers that commonly bordered the walks of kitchen gardens, and for a very long period these were most fashionable. The close-nipped pyramids, cordons—upright, oblique, horizontal, single, and double—being a late fashion. Cordons generally proved failures, not because the idea was erroneous, but on account of the varieties which were suited to that particular method of training not having been selected, and only those grown thus. A later fashion is the opposite extreme of non-pruning, faulty for the same reason.

The fashions in plant culture have, however, varied more than in fruit culture. A greenhouse, even so late as a hundred years ago, was still merely a repository during the winter months of those plants which, plunged or planted out in summer, required protection during the inclement season of the year. A few annuals might be grown to furnish these during the time their rightful occupants were out of doors, but that was not always done. It seems hardly credible that structures roofed with tiles were yet employed as greenhouses at the time of which we write. But there came a sudden change, and drastic as it was sudden, and Heaths, Pelargoniums, hard-wooded plants, and by 1820, numerous hybrid Amaryllis called for a better system of housing. The inflation of prices during the wars with NAPOLEON, and the consequent appreciation of rents, enabled the moneyed classes to garden in a style never before attempted, and this, with the fashion for plant growing which set in was no doubt the origin of an increase of plant culture which has continued ever since.

The glass duty remitted much later has been supposed to have given an added impetus to indoor gardening, but its only effect was to cause the substitution of large panes for the small ones, on which duty had never been exacted. Quite early in the century the system of providing structures for special subjects was initiated to meet the requirements of Heaths and Pelargoniums, the so-called Geraniums, the first-named continuing long a fashionable plant among gardeners. The "Geranium" genus

very soon fell into the background, show and fancy Pelargoniums receiving the attention that formerly had been devoted to the genus as a whole. The fashion for zonals did not set in to any extent till Dr. Denny's improved strain caused a decided bias in their favour, and for a while these, and the new doubles were very fashionable. It is impossible to do more than refer to the fashion in such plants as the Camellia, Achimenes, Palms, Azaleas, and others; but we have at present something of a like nature progressing with Japanese Chrysanthemums, Malmaison Carnations, and Begonias.

A word is necessary to allude to out-door plant growing. A century ago there were borders devoted to collections of mixed flowers, with beds in which special subjects were cultivated; Roses, Hyacinths, Polyanthus, Anemones, Carnations, and Ranunculus, being the plants mainly treated thus, but there was no decorative gardening.

As early as 1806, a Miss Jackson published a little work in which designs for beds, cut out in lawns, with new methods of planting and arrangement were advocated, and the system of border-planting condemned. We gather from writers of the standing of Loudon and McIntosh, that Miss Jackson's ideas took a firm root, and I think there is little reason to doubt that here, and thus early, we find the inception of the bedding-out system. The material employed, however, was the same as in the system condemned.

The introduction by Douglas and others of many desirable annuals exerted a great stimulus to grouping; and about the same time it was discovered that many plants at first considered too tender to trust out-of-doors, were quite at home in our climate. Of such, mention may be made of *Salvia splendens*, *Erythrina cristagalli*, and *Kalosanthes coccinea*; these and other plants of a like nature were largely in fashion sixty years ago, but they soon gave place to others, because it was required that beds should be furnished with neat-growing plants, equal in height, and otherwise displaying as much uniformity as possible. Mrs. Loudon, for instance, in one of her books recommends the taller-growing subjects to be pegged down, and so we find this style of flower-gardening varied by ribbon borders, scrolls, circles, &c., running through the various phases of carpet-bedding till a very late period. That, of course, is a very broad statement of the case, because all along there was a large section of gardeners who still continued the cultivation of what are called florists' flowers in positions apart from the flower-garden proper, but the rule has been that the great majority of gardens has been convulsed by ever recurring changes of fashion.

In the matter of CUT FLOWERS, we find they were largely used when the century was young, particularly on occasions of public entertainments. It is, however, only in quite recent years that the demand for flowers on almost every occasion, either of rejoicing or of mourning, has assumed extraordinary proportions; and gardeners and others interested have been obliged to keep themselves in touch with the ever-changing fashions, not only in flowers, but likewise in the manner of using them. I can remember, forty years ago, when specimen blooms of Dahlias or Hollyhocks, with stalks inserted in dough, provided an up-to-date dinner-table decoration! Then the wonderful constructions we had in bouquets! But the intrinsic beauty of the flowers themselves saved all these and like fashions from contempt.

Flower-exhibiting has also undergone many changes of fashion. Florists used to meet and compare the best blooms of their favourites one with the other; but it was only about 1840, under the auspices of the Royal Horticultural Society, that the first prizes in open competition were offered, and not without a good deal of gloomy foreboding as to the result. Nothing, however, has done more to popularise the flowers for the time in fashion as this system of exhibiting. *B.*

A MIDLAND GARDEN.

(Continued from vol. xliii., p. 455.)

IN June, 1887, we planted our "Jubilee Tree." It was too late in the season to transplant from the open ground, so it was necessary to find a tree in a pot, and the only suitable thing I could get was a purple-leaved *Prunus Pissardi*, about 5 feet high. We had a family gathering, and did it ceremoniously. The old patriarch related his remembrance of the Coronation-day, when he carried the Union Jack at the head of the procession in his native town. Then he recited the following dedication:—

"To that pure soul who from its loftiest height
Has led the world in its faithfulness to right
Through fifty years, we consecrate this day,
And at her feet our grateful tribute lay
Of love and reverence.

Sovereign! Empress! Queen!
Large-sounding titles! But the world has seen
How life shames language. 'Tis the Lily's dower
Of stately whiteness makes her name a power.
And she for whom this day rings loud with praise
Has kept the Lily's whiteness through red days
Of blood and storm—of famine, fire, and strife—
And taught the world so. And as mother, wife,
And Queen, to mould the many through the few,
Made it Court duty to be pure and true,
As in old Arthur's days. That none should
stand,
Beside her throne with sullied heart or hand.
For this high model, shining like a star,
Above all heads, all peoples near and far,
Bless the great Monarch of these Isles, and we
Among the least yet loyally plant our tree
In glad remembrance of Victoria's Jubilee."

Then, with a flourish of trumpets and a libation of white wine, the tree was planted. It has thriven and done well, and is now an artistic study of living snow in spring, and of purple shadows through the summer and far into the autumn. This species of *Prunus* is said to have been brought from Persia some twenty or thirty years ago. It was certainly not known in my boyhood, and is only mentioned in works of the present generation. The purple colour of the leaves is no doubt only in the superficial cells, as in the Copper Beech. The internal cells must contain green chlorophyll. Possibly, the chlorophyll is peculiarly sensitive to light, and the purple pigment acts as an awning.

I have just had drawn into the garden a load of road-scrappings. All the roads in this neighbourhood are repaired with stone from the granitic rocks round Charnwood Forest. These rocks contain alumina, silica, lime, magnesia, iron, potash, and several other ingredients, and when ground and weathered they yield a particularly fertile soil. The soil is good in all those parts of Leicestershire which are covered with glacial drift from Charnwood. This garden is on such drift, but in some parts there is too large a proportion of clay, and the road-scrappings will lighten it.

At this season of the year it is interesting to notice the modes of branching of the various deciduous trees. A practised eye will distinguish them as easily in winter as in full foliage. The two forms of the Oak, *Quercus pedunculata* and *sessiliflora*, are quite distinct when pure-bred, the branching of *pedunculata* being the more crooked of the two. But there are many intermediate forms which it is difficult to determine. The Ash is known by its open branching and the turning up of its terminal sprays. The common Elm has generally one central trunk

and a dense mass of terminal spray, while the Wych Elm is much more open and spreading, and has very often two or three main stems. The Horse-Chestnut is known by the thickness of its terminals and the comparatively small number of them. The Sycamore is something like the Chestnut, but it has a more upright growth and more terminal twigs.

The curious twist which appears in the trunks of some full grown trees is a phenomenon not yet explained. It is particularly noticeable in the Horse-Chestnut, and in this tree the twist is always from left to right, beginning at the base. Several Apple and Plum-trees in this garden are slightly twisted in the same direction, but as far as I have seen, the Holly, the Hawthorn, and the Beech, when twisted at all, are always in the opposite direction. I have never noticed it in young trees, which makes it the more inexplicable. Nor is it by any means universal even in old ones. Observations on this point are wanted from all parts of the country, recording the species, the soil, the situation, and the direction of the twist. In recording the direction, let the observer always stand in front of the tree, begin at the base, and record what he sees. I think this is better than the method sometimes recommended, of imagining yourself in the centre of the spiral.

We have no shooting in this garden, and only one old cat, so we have plenty of birds; not many rarities, however. We are a mile from the outskirts of the town, but residences are being built all round us now, and even in our snug retreat we may expect the birds to become shyer. The most numerous species is, of course, the lively and impertinent sparrow. He is everywhere, personally insignificant, but imposing from sheer numbers. I have often counted thirty together on the Jubilee-tree waiting for their morning crumbs. Half-a-dozen robins are always about, and if any digging is going on, they will almost come and sit on your spade in their eagerness after the poor little worms.

The missel-thrush began to sing before Christmas, and the song-thrush and blackbird in the middle of January. The most interesting birds which visit the garden are the nuthatch, the tree-creeper, the spotted flycatcher, and the marsh-tit. The nuthatch runs up and down the trunks of trees insect-hunting, or sticks his nuts into the chinks of old bark, where we have often found the pierced and emptied shells. The tree-creeper runs up the trees only; he cannot turn and go head downwards, because he trusts to his tail more than to his feet; so he begins at the bottom, and when he has finished he opens his wings and flies to the bottom of another tree. The spotted flycatcher is a very amusing little fellow to watch; he sits on the top of a post or a stake or a stiff bush, and when he sees a fly or a moth a yard or two away, he makes a dart and a flutter, and is back again on his perch with the creature in his bill. The sport is repeated perhaps a dozen times in ten minutes. The marsh-tit generally comes in small companies of from three to six. A mutton-bone hung in a nut-tree will sometimes attract them. I have also seen them in a double-blossomed Cherry, picking insects from the bark. This bird is quite distinctly the marsh-tit, not the coal-tit with white cheeks, though the latter is said to be much the commoner in this county.

The garden is situated between two rookeries, which are about a mile apart, and we see a good deal of the inhabitants of both. Each rookery contains about 200 rooks, and every morning between half-past 7 and 9 o'clock the birds of each rookery go off to feed. The funny thing is, that neither party is content to feed on its own ground. The inhabitants of one rookery invariably go across to the fields round the other. Thus the two columns cross each other every morning in front of my house. They do not fly in a close phalanx like pigeons or starlings, but in a long straggling and much interrupted line consisting of a few odd ones, many parties of from two to six, and perhaps two or three groups of a score each, or one of about

fifty. Each column occupies about an hour in passing by. The two tribes seem to take no notice of each other, unless an occasional "caw" means "good morning" as they pass. The ways of rooks are past finding out.

I am trying this season *Saxifraga hypnoides* as an edging, and have set out about 50 yards of it. It seems to me a very suitable plant for the purpose. Perhaps *S. muscoides* might do even better, as being a little more compact in its mode of growth. *F. T. Mott, Birstal Hill, Leicester, January 22.*

P.S.—Just before this article was posted, came the sad news, "the Queen is dead." Here, then, terminated the grandest epoch of English history. Here ended the finest of all royal lives. Peace to a noble soul!

NEW OR NOTEWORTHY PLANTS.

BUDDLEIA COLOMBIE.

UNDER this name M. André describes, in the *Revue Horticole*, January 16, p. 37, a *Buddleia* with slender branches, lanceolate leaves, and long pendulous spikes of white flowers. It flowers at Golfe Juan, near Nice, in spring, and is very attractive. Its native country is not known.

RAVENEA HILDEBRANDTI, Bouché.

There is no doubt but that the so-called *Kentias*, which include species of the genera *Howea*, *Rhopalostylis*, *Hedyscepe*, *Hydriastele*, and *Kentia*, are good stove plants, but they have one fault: if well cultivated, they soon grow too large for rooms. In all other points they are more or less well adapted for rooms, and there are not many Palms so easily grown and so elegant as are the *Kentias*. Besides the *Chamædorea*s, which have the very great advantage that they also are very easily grown, and that there is much more variability in their fronds, I know of but few Palms which rival the *Kentias*. Only one do I know that has quite the same habit, but this remains of such small dimensions, that it can remain in a living room as a fine decorative plant even when it is about twenty years old, and has a stem about 2 to 3 feet high. This is the *Ravenea Hildebrandti*, Bouché, introduced from the mountains of the Comoro Islands by the famous traveller Hildebrandt, who also introduced into our gardens the brilliant *Bismarckia nobilis*. It seems that this plant loves a very dry air, for my specimen, which I have in my room, where the air is as dry as possible, shows no brown points. It is indeed an elegant Palm. The fronds resemble those of *Hedyscepe Canterburyana*, but are of a somewhat brighter green, and the petioles have a smooth brownish tomentum. Unfortunately, the plant is still rare in our gardens. It would be well to introduce it in large quantities as a market Palm, for it would sell by thousands. *U. D.*

ORCHID NOTES AND GLEANINGS.

LÆLIO-CATTLEYA DIGBYANO-MOSSIE.

THE plant of *Lælio-Cattleya Digbyano-Mossie* (*Lælia Digbyana* ♂, *Cattleya Mossie* ♀), of which we send you a photograph, was purchased from Messrs. James Veitch & Sons in 1890; and when first exhibited in this country in 1895 was awarded a First-class Certificate by the Massachusetts Horticultural Society. Exhibited again on Dec. 29, 1900, it was awarded a First-class Certificate of Merit for superior culture; the plant on this occasion carried nine flowers from three leads.

The plant in our collection differs somewhat from that in Baron Schroder's collection, taking more after the mother for colour in the lip, and being somewhat less fringed; this plant was never exhibited in England, nor figured in any work or publication. There are two smaller plants in Mrs. F. L. Ames' extensive collection of Orchids, which is particularly rich in hybrid *Cattleyas*, *Lælias*, and *Lælio-Cattleyas*. *W. N. Craig, Langwater Gardens, North Easton, Mass., U.S.A., January 16, 1901.*

BUSCOT PARK.

WHEN one hears of gardens on the banks of the Thames, we, in thought rush to Kew, Sion, Windsor, Dropmore, Cliveden, or Greenlands, but further away up the river, between Lechlade and Faringdon, stands Buscot Park, a magnificent estate of some 10,000 acres of splendid land; and if you require a pleasant walk, take the train to Faringdon, and about a couple of miles on the Lechlade Road, you come to the first lodge, of which a photograph is enclosed, a handsome stone building. Here you enter the beautifully timbered park, and

patches of Water-Lilies in glorious blossom; while in the foreground on the terrace, which is of very considerable extent, you have a lovely flower garden (fig. 48). The beds in great beauty, not too flat, with *Abutilons*, *Dracænas*, &c., to relieve the monotony, and vases with Ivy-leaved *Pelargoniums* hanging round give the whole scene a delightful sense of natural beauty and cultivated taste. Away in the background, shaded with trees, we come across some Bamboos, and it is an undoubted fact that much of the gardening will, in the near future, change in appearance by a large introduction of some of the finer kinds of these plants in all

vineries, and, if I remember rightly, the then gardener, Mr. Davis, some forty years ago, told me that it was in this vinery the *Victoria* *Hamburgh* Grape originated; it is filled with all the best kinds in a perfect state of cultivation, the crop is all that can be desired, the bunches large and finely finished. There are also the Melon-houses, for which this place is so noted; immense crops of *Earl's Favourite*, which Mr. Bastin considers only rivalled by a seedling he has raised, and which has been highly commended on various occasions when he has exhibited it. Here are also houses for Cucumbers, Tomatoes, and various other things



FIG. 48.—THE FLOWER-GARDEN, BUSCOT PARK.

strolling along the drive of two-and-a-half miles in length, you have time to admire the beauty of the surroundings, the beautiful undulating land, the handsome cattle, and the lovely trees. Gradually ascending, you reach the noble mansion built of stone by some of the former owners of the estate "The Lovedens," about 130 years ago; it has since been added to by its present owner, A. Henderson, Esq., M.P. The rooms are large and very well proportioned, and contain some magnificent gems of art, amongst them being some by the late Burne Jones, notably the "Briar Rose."

As you look from the mansion across the terrace, the view is enchanting, the large lake spread out before you, embosomed in fine trees, with the sun glittering on its surface, and here and there large

suitable places. From other points one gets glimpses of the silvery Thames, wandering through the woods in the distance. The lawns, which are in perfect keeping, are of very considerable extent, with occasional fine specimens of *Conifers* standing singly. Much of the undergrowth and some of the trees have been cleared away by the head gardener, Mr. Bastin, so as to expose the symmetry of each individual, as well as to extend the view, without in any way injuring the shelter of the more retired walks.

Leaving the mansion, a short walk takes us down to the stables, and thence into the kitchen garden (fig. 49, p. 121). This is divided into three large walled enclosures. The first, adjoining Mr. Bastin's house, contains a long range of

required in so large an establishment. Then we have large span-roofed stoves with a profusion of *Dracænas*, *Codiaeums* (*Crotons*), marvels of beauty and colour like the *Aralias*, *Anthuriums*, many of the best foliage plants, *Allamandas*, *Pancratiums*, and other fine flowering plants, with quantities of *Asparagus* of sorts, *Smilax*, &c. Then in the green-houses filled with all that is choice, in the way of *Gloxinias*, *Achimenes*, *Liliums*, zonal *Pelargoniums*, and hosts of other things, a perfect scene of beauty and of perfume; while outside such quantities of *Chrysanthemums* of all classes in such grand condition. In the borders in this division is a splendid collection of *Roses* in full flower, and borders of *Carnations*; and under the north wall some very fine *Abutilons* a perfect blaze of gold leaf; some

fine *Ricinus* 6 to 8 feet high, very effectively arranged with dwarfed flowering herbaceous plants.

Passing now into the central division, of which the illustration gives a fairly good idea, we find a magnificent range of Peach-houses, &c., in which a most abundant crop of very fine fruit; it is not necessary to enumerate the varieties, but the collection includes all the best of their various kinds, as Mr. Bastin does not believe in growing anything that is not first-rate, fully realising that it requires the same amount of attention, heat, space, and care to grow bad varieties as to grow good ones. In the centre of this garden is a large circular tank for the supply of water, and admirably adapted for Water-Lilies. The borders on either side of the main walk are a perfect glow of flower; all that is good and choice in the herbaceous line are to be found here. Dahlias and other tall-growing plants form a background; the whole arrangement is most effective, and an almost unlimited supply of cut flowers is obtained.

In the borders are pyramidal fruit-trees in grand order, with most promising crops, and in the open portions immense supplies of Strawberries, Currants, Raspberries, and other small fruit are gathered; while of the vegetables, salad, &c., that are grown for such a large establishment, only those who have to produce a continuous supply during the whole year can form an adequate idea.

In the upper division is again a splendid range of Peach-houses, equally fine, with a profuse crop of the choicest kinds, the trees being in good order, as in the other portion of the kitchen garden. Large quantities of all kinds of vegetables were growing in a luxuriant manner, and it says much for Mr. Bastin's ability and perseverance in bringing such soil into perfect condition for garden culture.

Without the walls there is plenty more ground under cultivation, and a large orchard of Apples and Pears is passed through on our way to the reservoir formed by the late proprietor, Mr. Campbell, with a view to irrigate the fields; but now water that is pumped up from the lake gives an unfailing supply for the garden at all seasons of the year.

This is but a cursory review, and gives no adequate idea of the way in which Mr. Bastin carries out his duties. All who love to see gardening well done should take an occasion to pay a visit to a place not specially known, but which promises to be one of the finest in the Kingdom. *R. P. G., November, 1900.*

SUCCULENTS.*

(Continued from p. 89.)

DISEASES AND INSECT PESTS.—The only disease to which succulents are much subject is that which has been already referred to, namely, the decay of the roots and stem, caused by excessive moisture. When this takes place the diseased portion should be at once cut off, and the plant kept quite dry until new roots are formed.

The plants are subject to the attacks of various kinds of mealy-bug, scale, and to red-spider. Sometimes syringing forcibly with clear water will clean the plants. If this is not effective they must be brushed or sponged. Great care is necessary in the use of insecticides, as the leaves and growing points are easily disfigured or destroyed. Many growers recommend Fir-tree oil. I prefer a weak solution of lemon-oil.

PROPAGATION.

The majority of plants belonging to this class are most easily propagated by means of cuttings. They are extremely tenacious of life. On the dry plains behind Accra I have often seen large branches, and even large trees, of succulent *Euphorbias* lying fresh and green on the ground, but which were evidently broken off by some tornado months or even years before. Many other instances could

be given of succulent plants retaining their freshness under adverse circumstances in a state of Nature, and this character enables cuttings to remain plump until roots have been formed. Some may be said to form cuttings naturally. In *Ceropegia dichotoma*, for instance, the lower parts of the stem decay, and the branches being scattered on the ground, take root and form new plants. When cuttings are taken off, they should be laid by until the cut surface has callused, and then put in sandy loam and kept dry until rooted.

Agaves, *Haworthias*, *Sempervivums*, &c., throw out offsets from the base of the stem, and are often utilised to propagate the plants. When seed can be procured it should be sown in a gentle heat, and after germination the seedlings should be placed in dry, airy quarters to prevent damping off. The raising of Agaves, *Cacti*, &c., from seed is a rather slow but very interesting process. The *Furcraeas* do not produce seed under artificial conditions, and only very sparsely under natural conditions. They compensate for this by producing numerous bulbils on the flower-stems after the flowers have fallen. The same thing is seen in some species of *Agave* and *Crassula*. Many succulents are capable of developing buds on the leaves, from which young plants can be grown. It is well to select well-ripened leaves. The surface of the soil in the cutting-pans ought to be covered with sand, into which the leaves are then simply pressed. The pans are then to be placed on a dry, sunny shelf, where roots and buds will soon develop. *Cotyledons*, *Senecios*, *Gasterias*, and many others may be increased in this way.

GRAFTING.

Succulent plants graft easily, and many of the finer *Mammillarias*, *Cereuses*, &c., are propagated by being grafted on stronger stocks, such as *Cereus tortuosus*, *C. peruvianus*, and *C. grandiflorus*. The operation must be performed during the early summer months when the plants are growing. To graft a *Mammillaria* it is only necessary to cut the base smoothly across, and the top of the stock to correspond, and then fix the scion in position by means of three stakes placed around the plant and tied together over the top, so as to exercise a constant pressure downwards. For *Echinocacti*, one stem may not be sufficient, when two or more must be used.

Grafting is also resorted to for the purpose of elevating dwarf or drooping plants on a stem. Many of the scandent *Crassulas*, for example, show to much better advantage when grafted on an upright stem. *Sempervivum arboreum* is well suited for these. Dwarf *Euphorbias*, like *E. Caput-Medusæ* may be grafted on stems of *E. polygona*, &c. The succulents most commonly grafted are *Epiphyllums*, their drooping habit rendering it necessary. *Pereskia* stocks are generally used, and sometimes a *Cereus*. Wedge-grafting is followed with these plants. *W. Brown.*

(To be continued.)

THE ROSARY.

"THE ROSARIANS' YEAR BOOK."

THE current issue of this publication (edited by the Rev. H. Honeywood D'Ombra) is likely to prove quite as useful as its predecessors. The book includes a portrait of the Rev. F. R. Burnside, an enthusiastic rosarian, of whose work an account is given. Other chapters deal with Roses under Glass, by Mr. Walter Eastlea, jun.; New Roses of 1900, Rev. Joseph Pemberton; the Rose and the National Rose Society in 1900, by the Editor; Hybrid Tea-scented and China Roses, Mr. Cecil Kant; Rose Exhibiting, Mr. R. West; Hardiness of Tea Roses, Mr. George Paul; and Rose Weather in 1900, by Mr. Ed. Mawley, Hon. Sec., National Rose Society. The annual is published by Bemrose & Sons, 23, Old Bailey, and Derby.

COLONIAL NOTES.

CANADA.

Fruit-growing in Canada.—Recent visits to the Dominion have re-impressed me with the growing importance of the horticultural interests of Canada. Canada was first of all a snowy waste, where furs could be taken; then it was a country where Wheat could be grown; but now it is a land where all the fruits of temperate climates ripen in rare perfection. The agricultural evolution thus rapidly sketched has been very real in its changes, and has tended continually to the amelioration of the Canadian citizen's domestic condition and to the increased reputation of the Dominion abroad. One ought not to talk of a subject like this without the statistics. But it is not the statistics which have impressed me so much as the facts; and, at any rate, statistics, though disproportionately convincing, are not easy reading. Statistics would show, however, that the consumption of home-grown fruit has increased enormously in Canada during the last few years, and that the export trade has developed even faster.

The characteristic features of the fruit industry in Canada are, naturally, the same as those of fruit-growing in the United States. That is, the commercial production of fruit is more prominent than amateur gardening. Large quantities of a uniform product, of a few varieties, are produced and are disposed of in the wholesale markets through middlemen. As is well known, this style of fruit-culture is developed on the continent of North America far beyond anything ever seen elsewhere.

Canada does not have a part in the Citrus fruit industries of the continent, but all the other staple market crops are grown in great perfection. Peaches, even, are produced in large quantities in restricted areas in Upper Ontario, and during the summer of 1900 were successfully ripened in many private gardens as far north as the island of Montreal. Grapes are grown commercially, also, and have been successfully shipped to English markets during the past season.

Pears in general do not seem to be amenable to the usual practices of American horticulture, and are not conspicuous as a market crop anywhere outside of the belt where the hybrid Pears of the Kieffer class can be grown. A few Kieffers are grown in Canada, but the Pear is characteristically not a feature of Canadian fruit growing. Neither is the Quince.

The Apple, which is, after all, the most prominent article in the American fruit industry, is grown in Canada in great perfection, and in rapidly increasing quantities. Long experience has shown that, other things being equal, the further north an Apple is grown, the firmer, later, and better-keeping it will be. And, as late keeping Apples always give the best cash returns, Canada participates largely in the profits of the Apple crop. The commercial Apple area has been travelling steadily and somewhat rapidly northwards, especially down the valley of the St. Lawrence, and large and profitable orchards now mark many farms where fifty years ago Apples were thought to be almost an impossibility. This fact has been very forcibly called to my attention in visiting the orchards themselves, and in attending the Canadian fruit exhibits. This northward progress has been brought about by several causes—by the introduction of hardier varieties, &c., but chiefly by the adoption of better methods of culture. At present, the cultural methods adopted in the commercial Apple-orchards of Canada and the States, are probably the best which ever commended the horticulture of any country.

Strawberries and the bush fruits are cultivated with large success in the Dominion, though, naturally, they make no showing in the export trade. The Canadian city markets are every year better supplied with fruits of this class, there being more fruit, of better quality, and larger profits to the growers.

* A paper read before the Kew Mutual Improvement Society by Mr. W. Brown.

Other fruits have taken rank locally as profitable commercial crops, and as therefore worthy of serious consideration. The island of Montreal, for example, has made a considerable reputation for its Musk Melons. These Melons are served with due ceremony at all the best Canadian tables during the season, and there is a considerable demand for them in the city markets of the States. Retail quotations in Boston and New York last fall were as high as a dollar and a quarter to a dollar and a half (about five to six shillings) each.

Amateur gardening takes a comparatively large place in Canadian home life. The English Canadians in particular display a love of gardening

THE WEATHER OF 1900.

THOSE of your readers who would care to file it in full can find it in the *Scotsman* for January 7, by applying at the office, either in London or Edinburgh. The paper has long been famed for the excellence and fulness of its weekly, monthly, and yearly reports, and they prove invaluable for reference and comparison.

One of the most striking features was the absence of severe frost at the times of year one has the most right to expect such occurrences. Another was the frequency of rain in the western and northern parts of the country. Until the end of

we had severe frosts, heavy storms both of rain and snow, and gales of wind, the latter being, however, with one exception, more frequent than severe. The spring-time was mostly cold and changeable. The summer months were characterised by very variable weather, and by an undue prevalence of thunderstorms. Over England, a spell of fine weather prevailed for nearly three weeks in July, the thermometer in some places rising to 90° or more on three or four distinct occasions. In Ireland and Scotland there was very little hot weather. Upon the whole, the autumn was mild and changeable, with a good deal of cloud and mist, but with little actual fog. Taking the



FIG. 49.—THE KITCHEN-GARDEN, WITH RANGES OF GLASSHOUSES, BUSCOT PARK. (SEE P. 119.)

which is sometimes remarkable and always inspiring. A few months ago a certain magazine in the United States offered a series of prizes for photographs of the best gardens; and in spite of the smaller population of Canada, the smaller garden area, and the much smaller circulation of the magazine in the Dominion, nearly one half the principal prizes were awarded to Canadian gardens. Extended observation on both sides the boundary line leads me to believe that the prizes were deservedly, not accidentally, won. Canada has long had a reputation as "Our Lady of the Snows": if any word of mine could make her appear also as "Our Lady of Fruits and Flowers," it would be my sincere pleasure to speak that word. *F. A. Waugh, Burlington, Vt., U.S.A., February 6, 1901*

the year the only gale of importance was that on February 15. The closing days of December, however, served to spoil the good character the year had hitherto borne in this respect. On December 20 a very severe gale from the westward swept over the northern parts of the kingdom, and caused many fatal disasters at sea. Little more than a week later our western and southern coasts experienced a similar visitation, the storm of December 28 being as severe as its predecessor, and certainly the most widespread of the whole year.

The year 1900 opened with a month of mild and uneventful weather, any shortcomings in these respects, however, being fully made up in February, when the elements seemed to conspire in giving us a specimen of winter in its most forbidding guise. At various times in the month

year as a whole, we find that the mean temperature was everywhere above the average, the excess being small in Scotland, and still smaller in Ireland, but large in the south of England. In no part of the country was the year so warm as 1899, 1898, or even 1896; it agreed closely with 1897. At Leith the absolute maximum was 79°, and the minimum 14°; while in London the maximum was 92°, and the minimum 18°.

The rainfall of 1900 was in excess of the average in all the more western and northern parts of the kingdom. At Stornoway the year's total amounted to 62½ inches, at Leith 31 inches. The actual amount recorded last year was greater than in any year since 1872. . . . In the central parts of England the rainfall of 1900 agreed very closely with the average, but in the east and south of that

country there was a deficiency amounting over these districts, as a whole, to about 7 per cent. In London, the total fall of a little over 22 inches was as much as 11 per cent. less than the average, last year being the sixth in succession with a considerable deficiency of rain.

The amount of bright sunshine recorded last year was less than the average over Scotland generally, but slightly in excess in the extreme west and north. At Aberdeen there were only 241 hours, as against an average of 1421; the year being the duller since the establishment of the sunshine recorder in 1881. Over the greater part of England and Ireland, the duration of sunshine was in excess of the normal, the excess being large at some of the coast stations in the west and south; at Llandudno there was a total of 1543 hours as against an average of 1350 hours. In London (at Westminster) the difference from the normal was trifling. Thus, while last year could scarcely be regarded in any sense as an *annus mirabilis*, it was by no means devoid of interest. D. T. F.

THE WEEK'S WORK.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bicton, East Budleigh, Devonshire.

Cabbage.—Sow seeds in a box, place in gentle heat close to the glass, in order to prevent drawing, and harden off gradually, before pricking out the seedlings in a cold frame or pit; they will come in usefully during the summer. Those pricked out in late autumn should have the soil stirred between them. These will be nice plants to put out next month, and will form a succession to the early spring crop. I may add that owing to the mild weather up to January, we have been enabled to cut some nice heads of Ellam's Early.

Spinach.—This crop has suffered badly from frost and wind in this part of the country, and I am sowing seeds of summer Spinach on a warm border in shallow drills drawn at 12 inches apart, and the plants when they appear will be thinned to about 5 inches. Let the ground carrying winter Spinach be stirred with the Dutch hoe, and it will start into growth anew so soon as the sun gains power.

Lettuces.—If the stock of autumn-sown plants standing in frames and pits has been consumed, it may be replaced with Cabbage-Lettuces of fair size growing in beds in the open, placing a mild hotbed of leaves in the frames, and over this a layer of light soil, 9 inches thick. If no frame or pit be available, a temporary one may be knocked together with boards or slabs, and a light frame-work of rods, &c., nailed on to these to afford support to a covering of canvas or mats, putting this on the frame at night and removing it in the morning, unless the weather is frosty or snow is falling. Lettuces thus treated will be ready for consumption a few weeks before plants growing in the open air. Let sowings made last month be pricked off before the seedlings get drawn. These will likewise succeed under a frame on a mild hot-bed of leaves.

Cauliflowers.—Afford the plants plenty of air, putting the tops of the hand-glasses, *cloches*, or lights of frames over them when frost threatens. If the plants are crowded do not hesitate to lift each alternate plant, with a trowel, and plant them under hand-lights, *cloches*, or garden-frames, at from 6 to 8 inches apart. If the soil be dry apply water, and keep close for a few days.

General Work.—Clear the quarters of spent crops or stumps, and finish all seasonable manuring, digging, and trenching, taking the precaution when doing so to change the land for all Brassicas if it be practicable; although repeated cropping with these kinds of vegetables can be carried on for several years in succession with good results. Where this has to be done, top-dressings of Clay's guano or nitrate of soda should be applied in the season of growth. The surface of the Onion and Parsnip quarters should be turned over with a fork in readiness for sowing next month. In the milder parts of the country, when the frost has got out of the ground, early varieties of the Potato may be planted on warm borders, the shoots being protected with litter or bracken when frost threatens. Set them at 2 feet by 1 foot apart, and 6 inches deep.

THE HARDY FRUIT GARDEN.

By C. HERRIN.

Canker of the Apple and Pear.—A remedy, or at least a check to the spread of canker in trees, that are otherwise healthy, may be applied while growth is dormant. First scrape the infected spots with a knife, removing entirely the dead wood down to the quick, then scrub the branches and stems with soft-soap and hot water, and when dry apply a dressing of Stockholm tar and tallow, brushing it well into the diseased parts with a half-worn-out paint brush. This mixture is made with seven parts tar and two of tallow, and it should be made warm in a saucepan, stirring it thoroughly till well mixed.

Cherries as Bushes.—Grown in this form, Morello Cherries and others of that class are very prolific, but the bushes are very liable in rural districts to loss of buds and fruit by bullfinches, blackbirds, and thrushes, which renders protection with fish-netting very desirable. The nets should be kept at a distance from the bushes by means of a light framework of poles or Bean-sticks, or the branches will be made pendent. Branches that take a downward direction should be cut away, and leading shoots shortened to a bud, pointing in an upward direction about 9 inches from the old wood if further extension is sought for, otherwise to within two or three buds; and the laterals thinned where thickly placed, removing the weaker, and allowing the stronger to remain almost at full length. Sweet or dessert varieties should be more closely pruned, so that the production of numerous spurs may be secured. But with these also a certain amount of extension is desirable, if the trees are to remain in a healthy state. If summer pinching of the shoots was carried out, pruning at this season will naturally be slight, only the points of leading shoots requiring to be shortened, and unpruned laterals spurred in to two or three buds.

Red and White Currants.—Young, and recently planted bushes should be somewhat closely pruned, so that a good framework for the crowns may be formed. Fruiting bushes should have the lateral shoots reduced in length to three or four prominent buds, and the leading ones, if bushes of larger size are desired, to about two-thirds of their length, otherwise they may be cut back like the lateral shoots. In aged bushes, a few strong young shoots should be encouraged to grow up from the lower limbs or stem, and the older branches removed in a year or two afterwards. This is the method of pruning generally adopted by market growers, and the method facilitates the gathering of the fruit. In pruning, cut to a bud pointing in an upward direction, as it is desirable that shoots shall take this course, otherwise the fruit on the branches near the ground gets splashed with soil in rainy weather. Cordons grown on walls, fences, or trellises, produce very fine fruit useful for the dessert, and where in request for this purpose some should be grown in this manner. For a late supply they may also be planted on a northern aspect. These cordons should have all the lateral shoots closely spurred in, allowing the leaders to extend as far as the space will permit, simply cutting back the weak points. Young plants should possess three shoots to form fruiting branches, or triple-branched cordons; this number being preferable to single or double, the trees being longer lived than when so closely restricted.

Black Currants require a different system of pruning. Side shoots should not be spurred in, but all young growths allowed to remain at full length, or be only slightly shortened. The bushes should be encouraged to make a vigorous growth, and where too thickly placed, old bearing branches be removed bodily. Where the Black Currant mite is troublesome, plant in rows alternately with Raspberries or Gooseberries.

FRUITS UNDER GLASS.

By MALCOLM MCINTYRE, Gardener to Sir CHAS. TENNANT, The Glen, Innerleithen, Peeblesshire.

Planting Grape-vines.—There is still time to plant ripened canes. If planted inside the house, the smaller the canes the better, as they are most likely to turn out successfully; but if they are to be brought through the walls from the outside border, moderately-strong canes are better. Vines intended to be permanent should not be cropped the first season following planting, and the smallest are the least likely to long remain stationary after the stored-up sap is exhausted. Before planting, the roots should be carefully separated from the soil by soaking the balls in water for a short time. The

planting should be shallow, the roots slanting downward, and spread out to their full extent, and damaged portions cut off clean. As an assistance in starting, the roots should be covered with finely-sifted, rather light soil. It is now getting rather late to prune young Vines, owing to the danger of bleeding, and the better course to pursue at this date is to disbud as fast as they push, doing the actual pruning when the Vines are in full leaf. Small Vines that are planted in the interior borders should be disbudded to the lowest joint. Plants that have roots in inside and outside borders should be afforded a slight mulching of stable-litter.

The Cherry-house.—For Cherries in a house by themselves, a temperature of 40° to 45°, and about 50° in the daytime, should be afforded, and the trees, aided by the mild weather hitherto prevailing, will rapidly unfold their buds. Before the trees come into bloom, let the Cherry-house be fumigated, as aphides are sure to be present on them; or, instead, syringe the trees with a mild insecticide, so as to make sure that the insects are killed. Transplanting and planting should be brought quickly to an end. It is always prudent to afford slight shade to newly-planted trees, and as favouring rapid re-establishment, the trees should be syringed frequently. For the early forcing of Cherries, a lean to having a south aspect is best, and if it be 7 feet wide, it is enough. The border at the back of such a house may be planted with standard trees, the front "riders" with dwarf fan-trained trees on a trellis 6 feet. The finest fruit is invariably got from trees trained a few inches from the roof. Orchard-houses are mostly built with span-roofs, and the trees either grown in pots or tubs, the borders being planted with bushes, pyramids, or low standards, and there may be fan-trained trees on trellises fixed 12 inches distant from the glass. The top and bottom ventilation must be ample, and in the case of houses used for early forcing, the roof-lights should be removable. The border will be inside, though the roots may have access to an outside border, both of which should consist of strong loam, together with one-sixth part of the whole consisting of lime-rubbish, and an eighth of road-grit, and the drainage should be good. If the loam is very heavy, sand and lime-rubbish should be added to it in greater proportion than that given above. Young trees whose roots have previously been pruned may be lifted from outside borders, and they will fruit the first year. Mulch them with stable-litter, and apply water to the soil after planting is completed. Let the trees be syringed, and afford air freely in the morning and afternoon. When the trees are fairly on the move, the day temperature from fire-heat being 50° to 55°, raise it to 60° or 65° with sun-heat, and increase the amount of air as the warmth rises. A slight amount of ventilation may be given on day and night; a warmth of 40° to 45° at night by artificial heat will suffice. The best varieties of Cherries are May Duke, Elton, Governor Wood, Early Rivers, and Empress Eugénie.

Peaches.—Those trees that were started early in the present month should not be syringed after the flower-buds show colour, but in fine weather the paths may be damped twice or thrice daily. If aphides are remarked, apply the XL All vapour, destroying the insects before the flowers open. Temperatures at night, 40° to 45°, and by day, 50°, and when anything above this figure, afford air freely. As soon as the flowers open, raise the warmth to 5° and 10° with sun-heat, and always with good ventilation. In cold weather the temperature may fall to 40° at night, and 50° by day, with air admitted at the top of the house in small volume.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. I. MEASURES, Esq., Cambridge Lodge, Flodden Road, Camberwell.

Masdevallias are Orchids which require a liberal treatment at all seasons, owing to their being in a more or less active condition. It is therefore advisable when repotting, which is best done at the present season, to provide ample drainage materials, compost of a more than usually porous nature, a small quantity of sand or small crocks being added to increase its porosity.

Stelis.—Another species of small size, closely allied to *Masdevallias*, should be accommodated in small pots; and the present is the right season to perform any repotting the plants may require. Let the drainage be ample, and make the compost moderately firm about the base of the growths.

Ocotomeria is a genus that contains some interesting varieties, and one of the best is *O. diaphana*. This variety has white flowers resembling, in shape, those of some *Pleurothallis*. The plants succeed in shallow pans hung near to the roof. Any repotting should be carried out forthwith. The compost should consist of good turfy-peat and sphagnum-moss in equal proportions. This section of Orchids should be always afforded rain-water. The chief factor in this successful cultivation, is to have the potting materials in a satisfactory condition to induce the moss to grow, and unless rain-water is used for watering purposes, the moss is injured, and the decay thus commenced spreads, and soon the whole potful becomes soured, and the plants suffer in consequence.

Scaphosepalums are almost perpetual flowering plants. The variety, *S. gibbosum*, has not been without flowers during the time I have had charge of this collection. *S. oethodes*, *S. antenniferum*, *S. pulverulentum*, and others, are rarely without flowers. These may be grown in pots arranged among the cool-house.

Artificial heat.—The frosty weather of late will have rendered the use of fire-heat essential in the cool-houses, but no more should be made use of than is absolutely required, as it is injurious to the plants, especially in dry-houses, causing shrivelling and loss of foliage, besides encouraging the spread of insect pests, especially red-spider. A careful examination of the leaves of the *Chimara* section of *Masdevallias*, of which, at the present time, there are so many young leaves, is especially called for, the creatures doing much harm before their presence is suspected. *Cymbidiums* often become infested with red-spider, where the conditions are favourable to them. In any case the leaves, especially the under-sides of the same, should be cleansed with a sponge and tepid water at intervals of a few days. If this be done before the pest has become established on the plants, disfigurement of the leaves is prevented. Green and black aphides are sure to appear after a liberal use of artificial heat, and recourse must be had to fumigation or vaporisation at intervals of six or eight days.

Oncidium macranthum is perhaps the most attractive and desirable of the cool-house. I find it does satisfactorily at the colder end of the *Odontoglossum*-house. The stage is an open one, under which is the rain-water tank, the tank being slightly below the level of the floor, and the plants are undoubtedly benefited by the moisture which they are thus enabled to obtain, for, during the rooting season, the roots quickly pass down the sides of the pots, and find their way below the staging to such an extent that it becomes difficult to deal with them when arranging and cleaning the plants. The flower-spikes have become prominent, and if these have been allowed to ramble about, they should now be secured in some desirable position before the flowers open. It is a good practice to train them from the first around a few neat sticks pushed down near the rim of the pot. Other *Oncidiums* of this section, namely *O. loxense*, *O. serratum*, and *O. superbiens*, should be dealt with in a similar manner, and the side breaks on which the bulk of the flowers are produced, kept free from green-fly by removing them with a soft sponge and water.

THE FLOWER GARDEN.

By T. H. SLADE, Gardener to Lord POLTIMORE, Poltimore Park, Exeter.

Conifers.—Young specimen trees whose leaders are weak should be furnished with a stiff stick, to which they may be fastened, firmly attaching it to the stem of the tree, and having it long enough to reach a foot or more above the top of the leader. Should the leader be lost from any cause, the next best shoot should be fastened to a stick so as in time to take the place of the lost leader.

Tuberous Begonias.—The stock of tubers may be placed in shallow boxes on a layer of spent Mushroom-dung. When they grow the root will enter the dung, and the tubers will lift with good balls when required for planting. Cover the tubers with sandy soil to the depth of half an inch, and place in slight heat. Apply water when signs of growth are observed. These should make good plants for bedding-out, and if not much heat is applied, the leaves will not scald when put into the beds.

Abutilons.—The varieties with variegated foliage, viz., *Thompsoni* and *vexillarium*, are both useful

dot plants, and the first-named if grown as a standard of from 2 to 3 feet in height, and planted thinly over dwarf plants, is very effective. Plants raised from cuttings struck last autumn should be potted singly in small pots, and any older plants of *A. Thompsoni* should have the stems trimmed to the required height, and be started gently.

Hardy Climbers may now be pruned and made secure to their supports. In pruning, it must be borne in mind on what wood the flowers are produced, and if on current season's growth, or on the older ripened wood.

Leaf-mould.—The present is a good time for stacking tree-leaves in some place near the gardens to decay and form leaf-mould. Generally, leaves are collected and placed in a heap without anything else being added to them, but if cow-stall dung and litter be obtainable, it would increase the manurial value of the mould, and be useful for certain kinds of plants. The tree-leaves should be freed from fallen sticks, and put into an oblong heap in alternate layers. The heap should be turned in about two or three months afterwards; and in about a year it will be sufficiently decayed to be sifted, which should be done, and the undecayed portion that will not pass through the screen put into a heap by itself to still further decay. The fine portion of leaf-mould separated from the undecayed should be put under cover, not left exposed to the weather, which robs it of its manurial properties, and spoils it in other ways. Sawdust, chips, twigs, and sticks of small size, may be similarly treated, and give, in two to three years, a very suitable soil, similar to leaf-mould, for mixing with the soil used in potting New Holland plants and Camellias.

Loam.—This very much-used-kind of soil is mostly obtained in quantity on country estates, and it should now be dug and stacked as opportunity offers. The best part of pasture-loam is that lying between 3 or 4 inches of the surface, including the turf. As an antidote to wireworm, sprinkle soot between the layers in stacking it, and push some Carrots with the centres scooped out into the stack, which will form capital traps for the wireworms.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HUSSEY PACKE, Esq., J.P., Prestwold Hall, Loughborough.

Tuberous-rooted Begonias.—For greenhouse or conservatory display, few plants are better than *Begonias*. The usual method of storage when at rest is to shake the tubers out of the soil in autumn and lay them in shallow boxes, placing these in a temperature of 45°. The more vigorous tubers are those of two years old, which I recommend the gardener to reserve for growing in pots, the older ones being planted in beds and borders. Place the tubers into boxes in a compost consisting of three parts leaf-soil, loam one part, and sand, and place in a temperature of 50° until grown sufficiently for being potted singly. The double varieties require much care in the early stage of growth. I have potted these singly in 3-inch pots in the above-named compost. Place the pots on a shelf in a house having 50° of warmth, and apply as much moisture, and no more, as will induce the tubers to grow. When the pots are filled with roots, guano-water, half an ounce to the gallon, may be afforded occasionally.

Ferns.—Many species are now coming into growth, calling for a general overhauling of the stock of plants, and repotting, so that the plants get established before the sun gains much power. By the gradual development of the young growths in subdued light in the early stages of growth most Ferns will be enabled to endure, and be benefited by, greater exposure to sunlight than is generally admitted. This is most noticeable in the bright colour assumed by many *Adiantums*, *Pteris*, *Blechnums*, &c., when the shading is not dense. For general decorative purposes the following species and varieties will be found acceptable, viz., *Adiantum cuneatum*, *A. concinnum latum*, *A. dolabriforme*, *A. Edgworthi*, *A. formosum*, *A. gracillimum*, *A. macrophyllum*, and the var. *A. macrophyllum albo-striatum*, *A. Farleyense*, *A. mundulum*, *A. setulosum*, and *A. Williamsii*; *Asplenium Belangeri*, *A. bulbiferum*, *A. Mayi*, *A. Veitchianum*, and *A. viviparum*; *Cheilanthes distans*, *Cyrtomium falcatum*, *Davallia fijiensis* and *D. Mooreana*, *Gymnogramma Laucheanum pulchellum* and *Wettendahallium*, *Lomaria gibba*, *Microlepia hirta cristata*, *Nephrolepis Duffi*, *N.*

exaltata, and *N. pectinata*, *Onychium japonicum*, *Phlebodium aureum*, *Polypodium appendiculatum* and *P. Schneideri*, *Pteris adiantifolia*, *P. tremula*, *P. argyræa*, *P. longifolia*, *P. cretica albo-lineata*, *P. umbrosa*, and the several varieties of the crested form of *Pteris serrulata*. The following are suitable for growing in baskets:—*Adiantum affine*, *Davallia bullata*, *D. fijiensis*, *Goniophlebium sub-auriculatum*, *Nephrolepis pectinata*, *Polypodium Schneideri*, and *Woodwardia radicans*. These Ferns can be grown successfully in an intermediate temperature, and many of them in the greenhouse during the summer months. The best kind of compost for Ferns consists of two parts turfy loam, the small particles being shaken out, peat one part, leaf-soil one part, together with a liberal quantity of sand, charcoal-dust, or brick-dust, passed through a fine-meshed sieve. Afford the pots ample drainage materials. Teaze out the old soil at the side of the ball, or boldly pare the ball; do not bury the crown; pot firmly. The plants should be afforded water the day before, or it will be difficult to wet the ball properly all through without soaking it, which is not desirable immediately after repotting. Place the plants upon a stage covered with gravel, which must be moistened daily. Syringe the sides of the pots, and maintain a humid state of the air. Be careful of the use of water until the plants begin to grow perceptibly.

THE APIARY.

By EXPERT.

Bees: The Treatment of one last year's swarm and five older hives, four boxes, and two Rush Skeps.—In answer to the enquiry of "F. H. C., Notts," about bees in hives and boxes, he cannot do anything with bees until April, other than supply them with a small quantity of candy-cake, and then he can divide the bees and put into a bar-frame and work for sections or run-honey; or he can—which is much better—allow the bees to swarm, and place the swarms in bar-frame hives; and in the autumn he can divide the bees from skeps, and strengthen his bar-frame hives, or make another lot. This, of course, depends on the number of hives which he may feel disposed to keep. If driven out in the spring, and they are fairly strong, he may place each lot in a single bar frame, but in the autumn he will require two lots in each hive, so that it is as well to allow the bees to swarm, and place them in bar-frame hives or hive, and they will make sufficient honey to last them till the spring returns, providing the season is good and hot. Of course, they must be fed. In all matters connected with bee-keeping, it is well to determine in the first place how many stocks are going to be kept, for it is a mistake to keep a lot of bees before one properly understands them; and again, it will be found that twelve stocks well looked after will furnish more honey than twenty hives neglected or indifferently looked after. Every bee-keeper should read Cowan's book on bee-keeping, which he may obtain of any bookseller, which contains a great deal of useful information of great importance to the beginner. In bee-keeping, I would say to all, master thoroughly the practical part first, and then, if one chooses, go into the scientific part; but it is dangerous trying to fathom the latter before you have mastered the former. A sharp look-out should be kept now for mice where the bees are kept in old box-hives and skeps, as these animals will eat up the stores of honey, and as a consequence the bees will be starved. Let the entrances be blocked up with clay, allowing just enough space for the bees to get in singly. See also that the sacks, or whatever covering one has, are secure, so that they cannot get in from the top. The entrances should be cleared of snow without disturbing the bees; this also applies to bar-frame hives. Damp quilts should be removed, and dry ones put in their places, dampness being very injurious to bees. A little piece of naphthaline should be placed on the top of the quilts, as a deterrent to the wax-moth breeding in the hives, this being a very dangerous pest.

Sections.—These should be now very carefully examined, as the moist weather is causing the honey to granulate, which makes it totally unsaleable. Unless one can find a market for it later on, it is the best policy now to turn the sections into money forthwith. I would again say, do not part with your goods before you are perfectly sure of your customer's *bona fides*.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

(Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, FEB. 26 { Royal Horticultural Society's Committee meet at the Drill Hall, Buckingham Gate.

SALES.

MONDAY and FRIDAY NEXT.—Japanese and English Lilies, Shrubs, Blackberries, Begonias, Stove and other Ferns, Roses, Lily of the Valley, &c., at Protheroe & Morris' Rooms.

WEDNESDAY NEXT.—Lilies, Fruit Trees, Dahlias, Liliun auratum, Azaleas, Rhododendrons, Palms, Tuberoses, &c., at Protheroe & Morris' Rooms.—Roses, Begonias, Gloxinias, Liliuns, and Herbaceous Flowering Plants, at Mr. Stevens' Rooms, 38, King Street, Covent Garden.

FRIDAY NEXT.—Importation of *Odontoglossum crispum* and Established *Orchids*, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—40°4'.

ACTUAL TEMPERATURES:—

LONDON.—February 20 (6 P.M.): Max. 37°; Min. 31°.
February 21.—Fine, slight frost.
PROVINCES.—February 20 (6 P.M.): Max. 44°, S.W. Ireland; Min., 31°, S.E. England.

We have received the following important communication from Mr. TUTCHER, of Hong Kong Botanic Gardens, and hasten to call the attention of our readers, especially those in tropical or sub-tropical climates, to it:—

"The subject of malarial fever is one of great importance to people living in the tropics. It has been proved conclusively that certain species of mosquitos inoculate man with the malaria parasite, and this parasite is one of the causes, if not the only one, of malarial fever. Nevertheless it appears a long cry from flower-pots to malaria, but the following will show that it is not so far after all. It had been stated that the *Anopheles*, the genus which conveys the malaria parasite, bred only in shallow pools in the rocky beds of streams, and in such like places. Also that the two genera *Anopheles* and *Culex* were never found breeding together in the same pool. As I took a great interest in the subject, I began to make investigations on my own behalf. There are many districts in the colony which are notoriously malarious, and I began by investigating the streams in these places. In all of them I found the larvæ of *Anopheles*, and in many of them those of *Culex*, but always in different pools. One day, after examining two or three streams in which I found *Anopheles*, I thought I would finish the day by seeing what a Chinese nursery would produce. I knew that I should find any quantity of *Culex*, and I hoped, of course, that I should find *Anopheles* also. It is a common thing for Chinese gardeners to have large flower-pots full of water standing about in their gardens or nurseries, in some cases for no particular reason, and in others for reasons which will be stated later on. It is necessary, however, to give some idea of a Chinese flower-pot, as it is very different from the ordinary English one. To begin with, when they are turned out from the potteries they have no holes in them for drainage; these have to be made by the gardener before commencing potting operations. In shape they are more like deep pans than anything else. From these remarks it will be easily seen that they are very convenient vessels for holding water, and in the circumstances it would be surprising if there were not a few of them containing water standing about in a nursery. It was to one of these pots I made my way on entering the nursery, and I saw at once that it contained hundreds of *Culex* larvæ. After watching for a few moments, I saw several larvæ of *Anopheles* in the same pot. I examined other pots after this with similar results. On asking the Chinaman in charge of the nursery if he knew what the larvæ

were, he replied that they were 'water mosquitos.' Questioned as to why he kept them, he said that they were for feeding his goldfish, of which he had a large number. Mr. AUSTEN, in his report on Major Ross' expedition to the West Coast of Africa, recently received, mentions a similar case of *Anopheles* and *Culex* larvæ having been found together. He states that the larvæ of *Anopheles* and *Culex* were found together in a tub outside the office of the Sanitary Department, Freetown. The nursery I visited is situated close to a house which has had an evil reputation for malaria for many years past, and in the light of our present knowledge, it appears feasible to ascribe the cause of its unhealthiness to the *Anopheles* mosquito. I have generally found the larvæ of *Anopheles* in stagnant pools in streams, and less frequently in nearly stagnant pools. I have also found them in puddles in gutters along the roadside. The *Culex* is not half so fastidious in its breeding places as the *Anopheles*; any old milk-tin, biscuit-box, or other receptacle that will hold water is quite sufficient for its tastes. The largest number of *Culex* larvæ that I ever found was in an old coffin on the hillside in a Chinese cemetery; without doubt it contained thousands. The Chinese in Hong Kong exhume their dead after a certain number of years, and this was a coffin which had served its purpose, and had been left on the hillside as of no further use. The Government is making experiments with a view to lessening the number of *Anopheles* by filling up their breeding places, and by removing all cover for mosquitos, such as brushwood, within the immediate vicinity of dwelling-houses. If people could prevent mosquitos from biting them, no doubt malaria would be soon stamped out. This is not an easy matter, although a great deal can be done by the use of mosquito-nets, especially as it is said that the *Anopheles* generally bite at night only."

OUR SUPPLEMENTARY ILLUSTRATION this week well portrays the exceedingly decorative qualities of the winter-flowering *Begonia Gloire de Lorraine*. A novelty only a few seasons ago, the variety has become so popular that it is now cultivated in almost every garden that possesses the necessary means. It is propagated by cuttings without difficulty on mild bottom-heat in a propagating-frame. While the plants are growing they require an intermediate temperature, and should be kept close to the glass, that the growths may be strong and shrubby. When in bloom in the conservatory they make a beautiful effect, as may be seen in our illustration, reproduced from a photograph taken by Mr. J. GREGORY in the conservatory of JOHN WARK, Esq., Yew Bank, Kenley (gr., Mr. WOODGATE).

LINNEAN SOCIETY.—The next meeting of the Society will be held on Thursday, February 21, at 8 P.M., when the following papers will be read:—Prof. E. RAY LANKESTER, LL.D., F.R.S., and Mr. R. LYDEKKER, F.R.S., on "The Affinities of *Elurops melanoleucus*"; M. A. GRUVEL, "Étude d'une espèce nouvelle de *Lepidopodes* (*Scalpellum maximum*)."
(Communicated by Prof. G. B. HOWES, Sec., L.S.) Exhibitions: Mr. S. PACE, "Some Early Stages of Pearl Oysters;" Mr. H. E. SMEDLEY, F.L.S., "A series of Photomicrographs illustrating the Histology of various types of Plants."

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Floral and Fruit Committees of the Royal Horticultural Society will take place on Tuesday, February 26, in the Drill Hall, Buckingham Gate, Westminster, from 1 to 4 P.M. A lecture on "The Making and Unmaking of Flowers" will be given by the Rev. Prof. G. HENSLOW, M.A., at 3 o'clock.

THE SALE OF WEED-KILLER.—Mr. WHITE, a seedsman of Worcester, was sometime since prosecuted under the Pharmacy Act, 1868, for selling two gallons of a weed-killer admitted to be a poison within the meaning of the Act, the vendor not

being duly registered as a chemist and druggist. It appeared that Mr. WHITE did not himself keep the weed-killer in stock, but passed on any orders he might receive for it to the manufacturers, who executed the order direct from their factory, so that the weed-killer did not come into the hands of Mr. WHITE at all. The county court judge, before whom the action was in the first instance tried, accordingly gave his judgment in favour of Mr. WHITE, as being merely an agent or canvasser for the Boundary Chemical Company, Ltd., and not the seller within the meaning of the Pharmacy Act. The decision was appealed against by the Pharmaceutical Society, but the two judges of the Divisional Court upheld the decision of the court below. The Society brought the matter before the Court of Appeal on February 15, when the Master of the Rolls, Lord Justice COLLINS, and Lord Justice ROMER, again affirmed the decision of the county court judge. The immunity of Mr. WHITE is thus made so abundantly clear that it is hardly likely the Pharmaceutical Society will carry the case further to the House of Lords.

KEW—No matter what the weather may be, the gardener and the plant-lover may visit Kew, even in mid-winter amid fog and snow, in the full assurance that his will not be a lost journey. Those in search of bright colour, beautiful form, and delicate fragrance, will find as usual much to gratify them in the show-house No. 4. Chinese Primroses of a good strain, including the "Stella" varieties; *Cinerarias*, *Hyacinths*, *Epacris*, "Mollis Azaleas," *Cyclamens*, *Lorraine Begonias*, the deep blue *Coleus thyrsoideus*, the double white Plums, and the rose-coloured *Cherries*, *Chorizanthe varium*, are all old friends. Less familiar is *Moschosma riparium*, a Labiate with soft, hairy, crenate leaves of small size, and with erect panicles of numerous small white flowers like those of a *Veronica*. It is a native of tropical Africa, but it has not yet found its way into the registers of garden plants. In the Orchid-house there is a collection of hybrid *Cypripediums* in bloom, *C. venustum*, *C. Harrisii*, *C. Bullerianum*, together with *Selenipedium grandiflorum*, and others. *Cymbidium Lowianum*, *Coeogyne Swainsoniana*, with pendulous racemes of cream-coloured flowers, each marked with a dark velvety-brown blotch; *Aspasia principissa*, remarkable for its lanceolate greenish segments with brown veins, and its large primrose-coloured lip with raised yellow plates; *Vanda Amesiana*, *Aërides vanderdarm*, the curious *Satyrium corifolium* and *S. odoratum*, with green flowers, are all worth notice. In the Victoria-house one of the most noticeable plants just now is *Pitcairnia corallina*, with narrow lanceolate, recurved, glaucous leaves 2 feet or so in length, and numerous spikes of large coral-red flowers, produced from the base of the stems. In the succulent-house *Aloe supralævis* is in bloom. This is an arborescent species, with a tall unbranched stem, narrow lanceolate leaves, channelled in the middle, and regularly studded at the edges with short deltoid spines. The numerous flowers are borne in erect, loosely branching panicles, and are of a greenish colour, relieved by the projecting orange-coloured anthers. The *Dracontium*, or *Godwinia gigas* (see fig. 50, p. 126), with its purple, scoop-like spathe and snake-like stem is still in flower in one of the stoves, but as it was lately shown at the Drill Hall meeting, it is not necessary to allude to it further now.

BRITISH MOSS FLORA.—Dr. BRAITHWAITE, 26, Endymion Road, Brixton, has issued two more parts of his invaluable *Monograph on British Mosses*. Three more parts will complete the work. It is lamentable to hear that the "rapacity of collectors" will soon exterminate some of the species. It is a pity that the names of such collectors are not published and held up to public obloquy.

DR. HENRY.—This gentleman, to whom botany and horticulture are under such great obligation, is returning home for a short time. He visited Hong Kong and Shanghai on his way home, and may possibly touch at Colombo.

QUEEN ALEXANDRA AND THE ROYAL GARDENERS' ORPHAN FUND.—At the annual meeting of the supporters of the Orphan Fund (see p. 130), it was unanimously resolved to present the following address to the Queen Consort:—

"TO HER MOST GRACIOUS MAJESTY QUEEN ALEXANDRA, LADY OF THE MOST NOBLE ORDER OF THE GARTER,

"The loyal and dutiful address of the President, Vice-Presidents, Treasurer, and Committee of the Royal Gardeners' Orphan Fund:

"MOST GRACIOUS QUEEN, — We, the undersigned, representing the Royal Gardeners' Orphan Fund, humbly approach Your Majesty to offer our respectful sympathy, to express our heartfelt sorrow on the death of our late Sovereign Lady Queen VICTORIA, and to assure Your Majesty that we deeply share the profound emotion that has affected all hearts at the irreparable loss which Your Majesty, the members of the Royal Family, and the whole Empire have sustained.

"We venture also to express our deep sense of gratitude to Your Majesty for your gracious patronage of this Institution, and to state that this benign influence has greatly conduced to its present prosperous condition, and we humbly beg leave to assure Your Majesty of our respectful attachment and devotion to your Royal Person and also of our dutiful loyalty to His Most Excellent Majesty the KING."

The reference in the above address to the Fund being in a prosperous condition is quite borne out by facts. Our report upon another page shows that the income last year was greater than ever; the invested capital exceeds £10,000, the interest upon which covers all expenses of administration. There are now eighty-six orphans of horticulturists receiving help from the Fund, this number including sixteen new ones elected on the 15th inst. The institution is doing most praiseworthy work.

MRS. P. C. M. VEITCH.—The sympathies of the horticultural world will be accorded in full measure to Mr. PETER VEITCH of Exeter, the head of the nursery firm of that city, who has to bear the great grief occasioned by the death of his wife on the 14th inst., after an illness of only two days' duration. Mrs. VEITCH was the sister of the Rev. HARRY DREW, who married a daughter of the late Mr. GLADSTONE, and who officiated at the funeral. There remain six children to mourn her loss. Among those present at the funeral was Mr. HARRY VEITCH a cousin of Mr. PETER VEITCH, and a large number of relatives and friends, who testified their sympathy with the family in their terrible calamity.

THE SURVEYORS' INSTITUTION.—The next ordinary general meeting will be held in the lecture hall of the Institution on Monday, February 25, 1901, when a paper will be read by Mr. THOMAS BLASHILL (Fellow), entitled "The Present Condition of the Building Industry." The chair will be taken at 8 o'clock. The Annual Dinner of the Institution will be held at the King's Hall, Holborn Restaurant, on Monday, March 4, 1901, at half-past 6 precisely; J. W. PENFOLD, hon. secretary; J. C. ROGERS, secretary.

"A CHAT ABOUT DAFFODILS."—The New South Wales Horticultural Association has reprinted the substance of Mr. BARR's conversations on the culture of these plants. The reprint takes the form of a small pamphlet, which is distributed among the horticultural societies of the colony, and will no doubt greatly tend to the advancement of Daffodil culture.

KEW AND THE BRITISH MUSEUM.—A commission has been appointed under the Presidency of Sir MICHAEL FOSTER, to consider the propriety or otherwise of removing some or all the herbaria now in the Natural History Museum at Cromwell Road, to the Royal Gardens at Kew. A large number of experts have given evidence, and it is anticipated that the commission will shortly give in their report. It is rumoured that the majority are in

favour of the removal to Kew. In any case, and independently of any such removal, steps will shortly be taken to enlarge the herbarium at Kew, so large are the accessions to it.

A NEW WAY OF GROWING POTATOS.—M. NOEL BERNARD, in the *Comptes Rendus*, states his opinion that the formation of tubers is the consequence of the infection of the roots by a parasitic or saprophytic and endophytic fungus. In the case of the Potato this fungus is *Fusarium solani*. This fungus M. BERNARD finds on the outside of healthy tubers as well as in the corky layers of the outer peel. M. BERNARD points out that if this fungus is the cause of the formation of tubers, we ought to be able to limit the formation of tubers by suppressing so far as possible infection by the fungus. This M. BERNARD has done by methods detailed in his communication to the *Académie des Sciences* (p. 356, 1901), and with the result of materially arresting the production of tubers on the one hand, and of facilitating their formation on the other.

"ONE AND ALL" GARDENING.—The present issue of this useful annual (Agricultural and Horticultural Association, Limited, 3, Agar Street, Strand), edited by Mr. EDWARD GREENING, will be found quite as interesting as its five forerunners. There are papers on "The Garden of Good Fortune," by the Editor; "How to grow Tomatoes," by W. IGGULDEN; "Shady Nooks and Corners," by T. W. SANDERS; "A Century's Work on the Improvement of Vegetables," by GEORGE WAUGH; and other articles of similar scope. The volume is abundantly illustrated, and the pictures are likely to find as much popularity as will the letterpress.

HELIANTHUS LENTICULARIS.—This is supposed to be the wild form of the common Sunflower, and is figured and described in the February number of *Meehan's Monthly*. The editor, however, doubts whether the prevalent supposition is correct. *H. lenticularis* was introduced to this country by DOUGLAS, in 1827, but had previously been described by LINDLEY, in 1825 (see *Botanical Register*, t. 1265). BRITTON and BROWN, *Illustrated Flora*, vol. iii., p. 422 (1898), do not recognise *lenticularis*, but adopt LINNÆUS' name of *annuus*; as also does ASA GRAY, in his *Synoptical Flora* (1884), vol. i., part 2, p. 272. S. W. FLETCHER, in *Bailey's Cyclopædia of American Horticulture*, vol. ii. (1900), p. 720, also retains LINNÆUS' name. The history of the Sunflower is given by DECAISNE in the *Flore des Serres*, xxiii. Mr. MEEHAN remarks that in crossing the plains, soon after the completion of the Union Pacific Railway, no signs of the plant could be seen on the prairies proper, but where the land had been disturbed in making the railway the plant abounded, as if the seed had been buried in the soil, and germinated when brought to or near the surface.

"FLORA OF THE CONGO."—MM. DE WILDEMAN and DURAND continue their valuable series of descriptions of new plants obtained from the Belgian Congo. The text is accompanied by 4 to well-executed lithographic plates. The 7th fascicle contains illustrations of several new species of *Hibiscus* and other plants, but none of special interest to horticulturists. The publication is issued from the Congo Museum, 10, Rue de Namur, Brussels.

TOBACCO IN CANADA.—At a recent meeting in Quebec, the Mayor of Contrecoeur stated that he had 50 acres of his own in Tobacco, and an additional 100 acres under contract by farmers growing Tobacco, with the result that they had netted £40,000 during the past year. He strongly advocated a wide extension of the experiment.

FRUIT FROM THE ANTIPODES.—On the 16th inst., the steamship *Ormuz* leaves Sydney, N.S.W., for Tilbury, with the first Apple cargo of the season. She is expected to arrive at Tilbury on the 30th prox., and will be followed in regular order by the remainder of the "Orient" fleet, of which brief notice will, as usual, be made in these pages.

CLEMATIS BUCHANIANA.—This is a native of western China, introduced to the Jardin des Plantes, Paris, in 1898, by Father GEORGE AUBERT. Though long known to botanists, it is a very variable species. The leaves are deeply pinnately divided, the ultimate segments oblong, acute, dentate, truncate at the base, and placed on long stalklets, which sometimes act as tendrils. The flowers are in clusters, bell-shaped, about 2 cent. long, of a greenish-yellow colour, and very fragrant. M. D. BOIS gives a full description and an illustration in the *Journal de la Société Nationale d'Horticulture de France*, December, 1900. The plant flowers in late autumn, and is probably quite hardy in this country, though in Paris it is deemed prudent to give it a little protection in winter.

"ICONES SELECTÆ HORTI THENENSIS."—The descriptions and illustrations of the plants grown by M. VAN DEN BOSSCHE in his garden at Tirlemont, Belgium, are continued by M. DE WILDEMAN. Two fascicles are before us. On grounds of priority *Candollea* is adopted in lieu of *Stylidium*, as proposed by the late Sir FERDINAND VON MUELLER. The plates are excellent, and the critical remarks of M. DE WILDEMAN luminous and instructive.

WALTHAM HOUSE.—In the number of *Country Life* for February 2 is an illustrated account of the residence of Mr. WILLIAM PAUL. It was formerly in the possession of ANTHONY TROLLOPE. Terraces, avenues, lakes with MARLIAC's Water Lilies, and, of course, a Rose-garden, are prominent features of Mr. PAUL's rural retreat. Specially noticeable is the library of garden-books, which have been got together with more than a collector's zeal, inasmuch as knowledge and judgment have been called into play quite as much as the collecting instinct. Mr. PAUL has a copy of CRESCENZIO's *Opus Ruralium Commodorum* dating from 1471, devoted to agricultural matters, together with many other once-famous books rarely met with in our libraries.

BOTANIC GARDEN, BELGRADE.—We have received a list of the seeds collected in the Botanic Garden, Belgrade, Servia, and available for exchange. Application should be made to Prof. JURISIC, the Director, or to M. OSCAR BIERBACH, the Inspector.

THE JARDIN DES PLANTES.—We have received a copy of the *Index Seminum*, or seed list, comprising those seeds which the Garden is prepared to send in exchange for other seeds. It occupies fourteen quarto pages, each of four columns. The Director is M. MAXIME CORNU, Rue Cuvier, Paris.

CAPE FRUITS.—Since our last note on this subject, two ships of the Union Castle line have arrived with consignments of some importance, the *Tantallon Castle* bringing 189 boxes of Plums, and 212 boxes of Peaches; and the *Dunottar Castle* with 280 boxes of Plums, 820 boxes of Peaches, and 18 of Nectarines, from Cape Town. (Since the above was in type we are asked to note the arrival of the *Briton* at Southampton with 2,124 packages of Peaches; 98 of Plums; 126 of Nectarines; and 27 packages of Pines.)

CANADIAN FRUIT SALES.—Pleasant has been the retrospect of the Ontario Fruit Growers' Association, recently published at Ottawa. Fruits of all descriptions, when well grown, selected, graded, packed on approved methods, and kept cool en route, found fairly remunerative prices, the total volume of the output being enormous. The whole retrospect is simply evidence of the fact that when all is done that can be done to ensure success—profit nearly always follows. The fruit our Canadian friends do not appear to have succeeded with in our markets are Grapes. A few years since it was given in evidence before a Committee of the Canadian Parliament that endeavours to market Grapes here had been simple failures—nobody would have anything to do with what it would not pay to push, but our friends in Ontario kept on trying again and again. The coster was brought into the service, and

Grapes went nearly begging—Grapes brought fresh from the vineyard, not in barrels—but this did not "take." The Manchester Ship Canal folk have, we believe, helped the marketing of the fresh, ripe fruit, and it is now more than probable that Manchester and the markets it supplies so rapidly will turn the scale in the producers' favour, and well-merited success crown the long-continued effort.

ROSE CONGRESS.—The fifth Congress of the French Society of Rose-growers will be held at Nice on Tuesday, April 9, at 9 A.M., in the Palais d'Agriculture. M. VIGER will preside over the Congress. Various questions are announced in the programme as likely to be discussed on this occasion. A horticultural exhibition will be held at the same time.

COMING EXHIBITIONS.—The various horticultural societies in the provinces are completing their arrangements for the exhibitions to be held in 1901. Schedules already to hand include the following:—

Royal Caledonian Horticultural.—The report of this important Society, which was instituted in 1809, shows that in matters of membership and finance there has been a little ground lost during the past year. We hope it may be made good in 1901. The Society has lost 31 members by deaths and resignations, but only 18 new members have been enrolled. Of these 18 new members, 7 are gardeners. There is a loss, therefore, of 13 members. The reserve fund has decreased from £758 19s. 11d. to £617 9s., the difference being £141 10s. 11d. The entries of exhibits at the spring show dropped from 569 in 1899 to 531 in 1900, but at the autumn show they increased from 2068 in 1899 to 2161 in 1900. The Council regret that, notwithstanding the continued excellence of the shows, the attendance of the public has again diminished, and suggest that the public require the additional attraction of a well-known band. Complaint is made that the heavy excess luggage rates charged by the railway companies has caused a diminution in the number of pot-plants exhibited. The NEILL prize was awarded by the Society to Mr. MALCOLM M'INTYRE, who is now writing our "Fruits under Glass" Calendar. The schedule for the Spring Show, to be held on April 3 and 4, includes 134 classes, for plants, cut flowers, fruits, and vegetables. Ninety-eight of these classes will be open to all, fourteen are reserved for amateurs, and the remainder for nurserymen. The prizes offered amount to the sum of £272. Entries should be made before March 27. The great autumn show of the Society, so remarkable for its display of fruit, will be held on September 11 and 12, and entries will not be received after September 4. The section for fruit has 103 classes open to all, the first of which calls for a display of fruit upon a table 10 ft. by 4 ft. 6 ins., decorated with plants, flowers, and foliage as though for dessert, but plate, wine-glasses, and decanters are properly prohibited. The exhibits will be judged twice, first from the standpoint of quality of fruit, and next for the excellence of decoration. These will constitute two competitions, the prizes being: for fruit, £5, £3 10s., and £2; and for decoration, £2, £1 10s., and £1. There are many important classes in this section, including some for hardy fruits only, and a medal is offered as an encouragement to the better cultivation of the Black Hamburgh Grape. The sections for plants, cut flowers, and vegetables are in most respects similar to last year, and include special classes for amateurs and for nurserymen. The amount of prize-money offered is £376. The Secretary is Mr. P. MURRAY THOMSON, S.S.C., 5, York Place, Edinburgh.

Taunton Deane Horticultural and Floricultural.—The annual show of this western society will take place on August 15, in the Park, Taunton. There are 179 classes, for plants, cut flowers, fruits, vegetables, and honey. A Veitch Memorial Medal will be awarded, in conjunction



FIG. 50.—FATHÉ OF *DRACONTIUM GIGAS*: COLOUR MAROON-PURPLE, ABOUT HALF SIZE. (SEE P. 124.)

with a sum of £10, as first prize in a class for a collection of fruits, eight varieties. In the leading class for plants a sum of £36 is offered. The secretary is Mr. J. S. WINSOR, 16, Hammet Street, Taunton.

MR. STANTON'S FRENCH HONOUR.—At a meeting of the Reading and District Mutual Improvement Association on the 11th inst., the President, Mr. LEONARD SUTTON, and members took the opportunity of congratulating Mr. G. STANTON, of Park Place Gardens, Henley-on-Thames, upon the distinction that had been conferred on him by the French Government in nominating him Chevalier du Mérite Agricole. Mr. STANTON said that the nomination came to him as a surprise. He received an official letter from the French Minister of Agriculture through the French Ambassador in London, informing him of the fact. A few days later came the full insignia of the order subscribed for by old French pupils, with advice that the parchment diploma would follow in due course. Why was this honour conferred? For acts of kindness shown in days past to young French gardeners who came to Park Place Gardens for improvement in horticulture. These young men are now become or becoming some of the leading horticulturists in France. He felt, said Mr. STANTON, that the greatest pleasure connected with the honour was the credit it gave through him to Park Place Gardens, where thirty years of his life had been spent, and also to the Reading and District Gardeners' Mutual Improvement Association, of which he had been a member for many years.

"CROYDON, NEW AND OLD."—This is one of the Homeland Handbooks (St. Bride's Press, 24, Bride Lane, Fleet Street), and is, indeed, a second revised edition of No. 7 of that series. It is well described as containing an immense amount of information for residents and visitors; it has a good map, a plan of the town, and many attractive illustrations. The letterpress is by Mr. EDWARD MARTIN and Mr. JOSEPH MORRIS, and is certainly above the quality of that given in the average "local guide," and the book should be studied by all intending visitors or residents.

THE FRENCH VINTAGE OF 1900.—The returns of the vintage of France of 1900 (excluding Algeria and Corsica) are of a phenomenal character. We learn, from the figures now to hand, that a greater quantity of wine was made than was the case in the abundant year of 1875—the total yield being 1,515 millions of gallons; or nearly 500 millions of gallons in excess of 1899, and 700 millions of gallons in excess of the average for the previous ten years. Now, as the acreage planted in Vines was only about 80,000 acres more than in 1899, it follows that the average yield was some 360 gallons per acre, compared with 247 gallons in 1898; whilst the entire value of the vintage is placed at £50,570,000.

MR. E. H. WILSON IN CHINA.—According to a recent number of the *Journal of the Kew Guild*, Mr. E. H. WILSON, who has been for some time travelling in China, is still in safety, and able to proceed with his work. In a letter recently received from him, Mr. WILSON says:—"When you last heard from me I was on the point of leaving for Szemdo, and I have but recently returned, after a very pleasant, interesting, and profitable time. I have brought back seeds and spores of 256 distinct species, and fifty species of living plants, including about thirty sorts of Orchids. I doubt if any of these are new to botanists, but I believe many are new to horticulture. *Jasminum primulinum* is the best of these, perhaps. It has yellow flowers as large as a five-shilling piece, and these are borne in great profusion. Neither HANCOCK, its discoverer, nor Dr. HENRY have ever seen a fruit of it. I also got bulbs of two new Lilies. My Orchids include twenty species of *Dendrobium*, and *Vanda Kimballiana* and *V. Amesiana*. One of the most interesting Ferns is *Scolopendrium*

Delavayi. Most of my plants were brought on mules' backs 375 miles overland, then about 500 miles down river to Haiphong, and thence on to Hongkong. Plants have a rougher time on mules' backs than they possibly could on niggers' heads. In Yunnan there are no such things as roads, as we understand the word, merely tracks on the mountain side. Yunnan is a wretchedly poor province, and, with the exception of large plateaux (which were formerly lakes) on which the principal towns are built, may be

full of knowledge of all kinds. A more genial man I have never met. He assisted me in every way he could, and whatever success attends our venture will be largely due to him. During my stay in Hongkong, I have had the good fortune to stop with that excellent old Kewite Mr. TUTCHER. His official duties take nearly all his time, but, during the Christmas and New Year's holidays, we have managed to get one or two pleasant rambles over the new territory of Kowloon. It is a very barren place apparently, but doubtless quite a number of

1901.—*Modern Advertising*. Monthly journal for advertisers, conducted by HUGH MACLEAY; previously issued as a supplement to the *Poster*, now a separate publication. Published at 9, Fleet Street, E.C.—*How to Make the Most of the Land* (Express Publishing Company, 30, Fleet St., E.C.). A new century edition, brought up-to-date by Mr. SAMPSON MORGAN, and containing information of undoubted value to commercial fruit-growers, market gardeners, and florists.—*Agricultural Gazette of New South Wales*, December, 1900, includes articles on: Olive Culture, by W. J.



FIG. 51.—CYPRIPEDIUM "T. W. BOND," COUNDON COURT VARIETY (×SWANIANUM ♀, ×HIRSUTISSIMUM).

Awarded a First-class Certificate by the Royal Horticultural Society on February 12, 1901. Shown by GEORGE SINGER, Esq., Coventry. (See description in *Gardeners' Chronicle*, last issue, p. 114, col. ii.)

described as a sea of mountains. In my journey to Szemdo I crossed no less than eleven distinct ranges, the highest altitude being 8,200 feet, and many exceeded 7,000 feet, and were fearfully steep. In one place we ascended 1,000 feet in three-quarters of an hour. The easiest way to climb such a mountain is to hang on to the mule's tail, and let him drag you up. Szemdo is the most God-forsaken place imaginable. It boasts five Europeans, and the next nearest is about 250 miles away at Bhamo. The best way to reach it is via Rangoon and Mandalay. I found Dr. HENRY a splendid fellow,

new plants will be found there when properly overhauled. I leave for Shanghai on the 7th, en route for Tchang."

PUBLICATIONS RECEIVED.—*Notes from the Botanical School of Trinity College, Dublin*, No. 4, January, 1901, includes: First Mitosis of the spore mother-cells of *Lilium*; Intercellular Rhizoids of the *Marchantiaceae*; Geitonogamy of *Arum Italicum*; Adventitious buds on *Drosera rotundifolia*; Self-parasitism of *Cuscuta reflexa*, &c.—*Delectus Seminum ex horto Cantabrigiensis Academiae ad mutuum commutationem propositum*, January,

ALLEN; Harvesting Millet for Hay; Salt-bushes, by T. E. GRIGG, and other appropriate matter.—*Journal of the Department of Agriculture of Western Australia*, December, 1900, vol. ii., part 6, contains notices of the: Benefits of Potato Spraying; Fungus Disease of Cherries; West Australian Poison Plants; Sea of Azov Barley, and kindred matters.—*The Austral Cultivist*, December, 1900. This is published in the interests of the Poultry Farmers' Committee of Victoria, the National Rose Society of Victoria, Victorian Silk and Rural Industries Association, National Beekeepers' Committee, and the Scent Farmers' Committee, so the nature of its contents is sufficiently

obvious. — *Queensland Agricultural Journal*, December, 1900. This contains a paper on "Open Spaces for the People," by Mr. P. MacMahon; a portrait, as frontispiece, of the Hon. Robert Philp, and articles of the usual description on matters of agricultural, dairying, horse-breeding, poultry, viticultural, forestry, and similar interests. — *The Photogram*, February, 1901 (published by Dawbarn & Ward, Ltd., 6, Farringdon Avenue, London, E.C.; and by Spon & Chamberlain, 12, Courtlandt Street, New York); editors, H. Snowden Ward, C. Weed Ward, and George Brown. The principal contents of the present issue is a paper by A. Carter on the New American School of Photography.

HOME CORRESPONDENCE.

THE BLACKLANDS' OAK.—During the violent storm which raged throughout the west of England on Saturday, January 19 last, a very fine old Oak of the pedunculate variety, standing in Blacklands Park, near Calne, the seat of H. Brown, Esq., was blown down. The tree was known locally as the "Blacklands' Oak," and was considered by many to be the finest Oak in the county of Wilts, although there are several pollards with a greater girth. This tree was not a pollard, but had a clean, straight stem of 18 feet, and at 9 feet up girthed 18 feet 3 inches over the bark. Numerous heavy branches were thrown off at the top of the main stem, forming an enormous head. Some years ago, the previous owner of the Park, thinking to benefit the tree, heavily mulched the ground round its base with pond-mud, and from that time it has gradually been decaying in both top and root. This, combined with a decided list towards the west, making the tree very top heavy, brought about its downfall. Some fifty years ago the tree was valued at £100, and that sum was actually offered by a firm of timber merchants, but refused by the owner. The total cubic contents of stem and branches were fully 600 feet. The photograph enclosed was taken immediately after its fall by Mr. J. Hunt of Calne. *A. C. Forbes.*

METRIC SYSTEM.—It seems, perhaps, somewhat early to talk about what is to be done under the reign of our new Sovereign, but this world cannot stand still, and it behoves us to help forward the march of progress which has been making such giant strides during the time that our late gracious Queen ruled over us. Surely one thing that could be done would be to put our money and weights and measures into line with those of our most enlightened neighbours, and adopt the metric system. Everyone who has had anything to do with foreign trade, or has read anything about commercial transactions, will be fully alive to the fact that the trade which this country does abroad is done in spite of the difficulties arising from our having monies and weights so different to other countries that it generally requires an interpreter to explain a business quotation to a foreign correspondent. But setting aside foreign trade, which some of us may, in our insular pride, fondly but fallaciously think that we can do without, how stand we with our inland trade? Take the farmer: if he has a quantity of wheat to sell, he takes up an agricultural paper and studies the market report. Presuming that he lives near a market where Wheat is sold by the imperial qr., he, of course, wants to see what Wheat is fetching by the quarter in other markets; what does he find? One market quotes by the sack, 3 bushels; another by the comb, 4 bushels; the next by the load, 5 quarters; or by the load, 3 bushels; or by the chaldron or last; and when we come to the ports, we find all these laid aside and the cental in use. After a close study of the report he comes out somewhat mystified. In some places markets exist which sell by the load, whilst 12 miles away Wheat is sold by the quarter, and so on. Of course, the reply may be made that the imperial quarter is alone legal; but whilst such confusion exists, would it not be best to sweep it all away, and start afresh with the metric system? It could not possibly be so difficult to learn as the foregoing tangle. Let us leave agriculture and turn to horticulture; we find in the Midlands everything in the way of home-grown fruit is sold by the peck. Now a peck is a measure of capacity, and as it is illegal to sell by measure, local custom has adopted a scale of weights to represent the peck. Thus a peck of Peas weighs 8 lb., one of

Broad Beans, 9 lb.; French Beans, 10 lb.; Strawberries, 12 lb.; Apples, Gooseberries, Onions, and Turnips, 16 lb.; Pears, Plums, Cherries, Damsons, 18 lb.; Potatos, 20 lb. How charmingly simple all this must be to the young and inexperienced house-keeper! and what a mass of information must be conveyed to the student of the market reports, who happens to reside in another part of the country where such commodities are sold by the pot, the bushel, strike, sieve, half-sieve, pottle, punnet, or what not! Even our Board of Trade reports the importation of so many bushels of Bananas! Could absurdity be carried further? Turn again to the seed trade. When putting up small seeds it is usual to do so in "packets," and there is no means [other than eyesight of knowing what is meant by this term packet. Consequently, we find that one firm sells two or three times the bulk of seed to the packet that another does. Of course, where seeds are large enough, they may be sold by count, 50 or 100 seeds to the packet; but such common things as Lobelia or Poppy do not lend themselves to counting, unless one has patience and a microscope. Why not sell by weight? How can you, when our smallest weight is a dram, one-sixteenth of an ounce? One cannot dance off into apothecaries' weight or Troy weight, and employ grains, scruples, drachms, or pennyweights. Oh, how simple all this seems compared to the metric system! where everything that can be weighed is weighed by one set of weights, and everything that can be measured is measured by one set of measures of capacity, instead of having pints, quarts, gallons, firkins, kilderkins, barrels, hogsheads, puncheons, butts, pipes, tuns, tierces, gills, pecks, bushels, and so on *ad infinitum*. Is it not time we had a change in these matters, and could a better time be chosen for the change than the commencement of a fresh reign, when a new coinage is about to appear? If we think the alteration advisable, let us be up and doing. There are Chambers of Commerce and Chambers of Agriculture; let us petition them to throw the weight of their opinion into the scale. They have oftentimes recommended the changes in the past; but most of our representatives in the Commons are men who have made their mark in business, and who, to use one of their own sayings, are too old to learn new ways. All they desire is to be left alone, and to let things be as they are "for their time." Will the time which is fit and suitable for all to change ever come? I think not, without agitation. *A. H. Pearson, Lowdham, Notts.*

BLENHEIM ORANGE PIPPIN APPLE.—I have always understood Blenheim Orange Apple to be a synonym of Blenheim Pippin, and have been very much surprised to find that in some gardens in Yorkshire two varieties quite distinct in character are cultivated under these two names respectively. Mr. Brunton, head gardener at Potto Hall, who has charge of a very fine collection of Apples, has there two varieties. I wonder what can be the origin of this? *Alfred Gant, Leeds.*

BROCCOLIS AND CAULIFLOWERS.—Your correspondent, Mr. Walters, must be very fortunate in regard to Broccoli, if, as he tells us in a recent issue, he has been enabled for a period of five years to furnish a regular supply of heads for the table, excepting for a period of two weeks in February of last year. During all that time they were exposed to some severe frosts, that is, if they remained in the quarters where they grew, and, as we all know, the early winter Broccolis are not capable of withstanding much frost. It is a matter of opinion as to whether ground should be dug or not that is to carry a crop of Broccoli. The practice to plant on firm ground is very general, under the idea that the plants are more weather proof. With regard to digging and manuring for a Cauliflower crop, I agree with Mr. Walters, as the manure and the deep digging aid the plants in withstanding summer drought. In light soils Cauliflowers always give the gardener much trouble in the summer. There were periods in the summer of 1900 when it became impossible on some kinds of land to prevent "blindness" in Cauliflowers, and only by the gardener planting large breadths and in different parts of the garden could the supply be maintained. I found, as usual, that Autumn Giant and Self-Protecting were very good after rain came in the autumn; the supply from these varieties lasting till the end of the year from plants standing in the open. The present winter has been hitherto in this part of the country favourable to the Broccoli

crop, and the prospects are still favourable. In this garden Snow's commenced to turn in during the first week in February, so that there was only a few days break in the supply. This variety will be followed, weather permitting, by Early Penzance and Veitch's Spring White. The growth of Broccoli has been very free this winter, and nearly all my plants have been layered for fear of loss. These stand on some land that was cleared of Strawberry plants, which was so hard that the holes had to be made with a crowbar. Even if opportunity served, I should not dig a disused Strawberry quarter before planting late Broccoli, experience having convinced me of the benefit of a firm, compact soil for these plants. *W. S., Wiltshire.*

CRINUM POWELLI X.—Some very interesting articles on hybridisation have appeared weekly in your paper since the present volume commenced. I shall feel obliged if you will notice that the writer has fallen into error when he describes the history and origin of *Crinum Powellii* x, which I raised from seed when living at Bury St. Edmunds. I am not sure whether it was in 1874 or a year earlier that I crossed *C. longifolium* with the pollen of *C. Moorei*, and had seedlings from both the pink and white forms of the first-named species. We grew them separately until they bloomed, and then we noticed that the bulbs from the white kind were of a deeper pink than the others. They had not all bloomed when I moved from Suffolk into Kent, when I had to dispose of them, not knowing whether I should have room to grow them, for they had increased so fast that it required a large sugar hogshead to hold the bulbs. I had not bloomed them all, for this was in 1880, and the white variety only appeared after they were planted out in the London nursery, from which they were distributed, and are now grown in nearly every quarter of the globe. The white variety has a better shape than the pink, for this takes more after the habit of the pollen-parent in the bloom, but the foliage partakes of both parents in its length and width. I have never known any of its blooms to seed, though I have hundreds of them yearly, and it was planted out from the seed-pan into the open ground, and was never protected, nor have I seen it grown under glass. This is not the case with *C. Moorei*, as it cannot be grown out-of-doors in the North. In the last fifteen or sixteen years this description of *C. Powellii* has appeared in the *Gardeners' Chronicle* many times, and has been confirmed by correspondents from every part of the United Kingdom. *C. B. Powell, Tunbridge Wells.*

STAUNTONIA HEXAPHYLLA AND CORDYLINA INDIVISA.—I beg to enclose a fruit from *Stauntonia latifolia*, which has fruited and ripened in the open air at the villa next to mine. The plant, probably twenty-five years old, grows on the dwelling-house in a sheltered position looking east, but sheltered from east winds by this house and many Sweet Bays (*Laurus nobilis*). I have never known this plant fruit before, and probably the two hot summers having ripened the wood has helped the fruiting. The *Stauntonia* flowers there and in my garden, and in many others every April or May, but I never knew it fruit. In spite of Mr. Fitzherbert, many still follow Nicholson, and call my plant *Cordylina indivisa*. *R. Hamilton Ramsay, Torquay.* [The fruit sent is that of *S. hexaphylla*, as is clear from the accompanying foliage. Both plants have been figured in the *Gardeners' Chronicle*, *S. latifolia* in 1876, vol. v., p. 596, and *S. hexaphylla* in same vol., p. 245. Of the first, both foliage and fruit were illustrated. Of the second only the foliage and flowers are shown. The fruit of *S. hexaphylla* as sent is almost exactly like that of *S. latifolia*, 3 inches long, 2 inches wide, oblong, obtuse, tapering to a short stalk, glabrous, and of a violet colour. The flavour is insipid. *Ed.*]

POTATOS IN CORNWALL.—Market growers in this county seldom save Potato-sets, but buy them of Lancashire and Lincolnshire dealers in the months of September and October, when they arrive in Cornwall straight from the fields, without any greening in the sun. The sets are invariably of middle and full size, and as soon as received they are stood on end on shelves, the bud end being upwards. The sheds in which the sets are stored are well ventilated in fine weather, and there they remain until planted in the month of February. I have described in a former issue of the *Gardeners' Chronicle* the mode of planting pursued. *G. Maers, gr., Sharpham, Devon.*

A PINETUM.—I have often thought that, instead of the stereotyped flat site usually assigned to a pinetum, a much more suitable one (where available) would be on the face of an undulating glen, with, if possible, a noisy stream in the bottom. Here, in the hands of a landscape gardener, grand results might be obtained, and the Conifers and allied species of trees would have the shelter and moisture which many of them require for their full development. The manner of procedure might be thus:—Plant isolated, tall-growing specimens on the knolls, with here and there groups of low-growing shrubs and wild flowers in the open spaces, and thus accentuate the noble proportions of the trees. Paths could be formed up and down the glen to afford opportunities for closer inspection. If the ground on the opposite bank stretches out flat, so much the better. This side should be mostly planted with dwarf-growing subjects. From here a fine upward view of the pinetum might be obtained. If necessary, pools could be formed in the streams for the planting of aquatics. One is sometimes inclined to take exception to the small flat sites assigned to Conifers, and termed a pinetum. When a fairly large site cannot be given, it is much better to plant in the pleasure ground, and not strive after effect by giving it a high-sounding name. To my mind, where a flat site is chosen for a pinetum, a walk or drive should lead to and through it, and thus afford an impression that something of importance was to be seen some distance away. *J. Baxter, gr., Bolder's Grange, Lymington, Hants.*

THE ROYAL HORTICULTURAL SOCIETY'S MEETING.—I am sure that I express the opinion of a great many Fellows when I regret that no opportunity was given at the annual meeting for a proper discussion anent a Horticultural Hall and offices. It has been abundantly manifested by the utterances at previous meetings, and by correspondence in the horticultural Press, that a very large number, quite possibly a large majority, of the Fellows consider this question to rank in importance before that of new gardens in lieu of Chiswick. The latter is not a pressing question, and is very clearly regarded as a quite secondary one for the time being, in view of the length of the unexpired lease. On the other hand, we are rapidly approaching the centennial year, when it is desired all round that something definite should be done to commemorate it. Despite the plainly manifested views of many fellows in favour of a hall, not only was the question entirely ignored in the society's Report, and the President's remarks thereupon, but when it was raised at the annual meeting by one of the Fellows present, it was practically snuffed out by his being requested to defer it to a later stage of the meeting, which being done, a vote of thanks to the President suddenly closed the business, without the opportunity promised having been given or even alluded to; while, when amid a general move, the question is persisted in, it is again deferred under pressure from the Chair, which could scarcely be resisted, in the guise of a request that the Fellows themselves should look about for a suitable hall or site, and bring the matter up when they had found one. This, I venture to submit, is not the way to treat a matter of such vital importance, especially as even in connection with the Council's favoured scheme of new gardens, we appear to be exactly where we were a year ago, at absolutely no definite progress was reported. Granted, for the sake of argument, that the gardens are a vital need, many Fellows contend that a hall giving proper instead of makeshift accommodation is an equally vital one; and that while the one need is actually provided for, for years to come, the other presses upon us every day, and should consequently form the prior subject of consideration. As the writer pointed out in April last, an attempt at raising the needful funds was made some years ago, and was only nipped in the bud by the Baring crisis, after some £27,000 out of £40,000 required, were promised. A larger amount, I understand, would now be needed; but look at the enormously changed and improved condition of the Society since that time. Then it was only slowly emerging from the slough of despond so ably pictured by Sir Trevor Lawrence in his speech; its membership was probably not half what it is now, and certainly it had not then established those claims for confidence in its rulers which subsequent success by leaps and bounds has undoubtedly established. With a fellowship of nearly 5000, including many members of great influence, the position is wholly changed; but so long as

the Council favours one scheme, while a large number of Fellows favour another, it is quite certain that between the two stools, either scheme must fail. If the Council would formulate their objections, and define the obstacles they experience to the idea of erecting a hall, the Fellows might be satisfied to drop it, or even, it may be, make suggestions which would enable it to overcome the difficulties; but as it is, at the annual meeting, which is really the only occasion when these matters can be discussed properly, so little time is allotted to the business that the whole of it is absorbed by formalities, and, as we have seen, no opportunity is given of ventilating opinions of vital interest. The last meeting had only one hour allotted to it, while two or three might well have been absorbed in relevant discussion of the points at issue. As it was, many of those present left with the impression that for all practical purposes, they might have remained at home. *C. T. D.*

CATTLE AND YEW TREES.—In the *Gardeners' Chronicle* for February 9, I notice a letter from Mr. Miller, when writing upon hedges, in which he says, that Yew-tree branches, except in a half-dried state, he does not think is injurious to stock when browsing upon them. I have not the issue by me as I write, but I think those are his words. I notice you concur in his statement. The following facts, however, which came directly under my own eyes proves that it is not always safe for cattle to eat the foliage of the Yew even in a green state. Some cows at Claydon Park, near Winslow, Buckinghamshire, during one night (a very rainy one) broke through a fence which surrounded a spinney in which were growing several Yews. In the morning either two or three of these cows were found in great agony, and died from the effects of browsing upon the Yews, and others were suffering from the same cause, but eventually they recovered. This circumstance, although it is nearly forty years ago since it happened, is remembered by me as if it occurred but yesterday. *James E. Whiting, Hampstead, N.W.*

IRELAND.

ROYAL HORTICULTURAL SOCIETY.

THE action of the Royal Horticultural Society of Ireland in dropping their annual spring function of the display of bulbous types, &c., has been rescinded, owing to the adverse manner with which the members of the society received this notice on the annual meeting. It was decided to issue a circular to those interested, asking them to guarantee a fund to defray the cost, to which a ready response has been forthcoming, enabling the Society to hold this show, probably the most interesting of the series. The venue will be their old quarters at the University Buildings, Earlsfort Terrace, during the month of April. The date is not officially determined, as schedules are not yet ready.

IRISH GARDENERS' SOCIETY.

The annual meeting of the above Society was held in their quarters, D'Olier Street, the chair being occupied by Mr. O'Kelly, and there was a large attendance of members present. After the usual preliminary business was transacted, Mr. Hall, the hon. secretary, read the report of last year's working, which shows a steady increase in the funds of the Society. The influx of new members shows no signs of diminution, yet the committee desire to impress upon their members the necessity to exert their energy in this direction; also, the committee were pleased to say, though their expenses were high, they were able to cope with the demands made upon their resources. After the adoption of the report, Mr. O'Kelly, as president, desired not to be re-elected for another twelve months, but his refusal was overruled, and he was appointed without opposition. Mr. Richardson was appointed vice-president, the committee practically remained unaltered, excepting in so far that Mr. Harris, who has been appointed to the one vacancy; Mr. Campbell was selected as assistant-secretary to Mr. Hall. After a series of votes of thanks were given and duly

responded to, Mr. Cottier (past-president) offered a prize of £1 for the winner in a pruning competition, the month of March to be the date for the competition; a committee was formed to draw up a scheme setting forth details for competitors, head gardeners to be debarred from entering, it being the wish of the donor that an apprentice should win it. Subsequent to the close of the meeting, Mr. Shaw offered to contribute a paper on Botany, with special reference to the gardener. *A. O'Neill.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

FEBRUARY 12.—*Present:* Dr. M. T. Masters (in the chair); Rev. W. Wilks, Messrs. Houston, Gordon, Douglas, A. W. Bennett, Dr. Rendle, P. Groom, Nicholson, Odell, O'Brien, Chapman, Hogg, Drury, A. Sutton, Bowles, Sanders, Elwes, Michael, Prof. Farmer, and Rev. G. Henslow, hon. sec.

In response to the invitation of the council of the Royal Horticultural Society to well-known men of science to join the Scientific Committee, with the view of rendering it more useful, a large gathering of new and old members assembled after the annual meeting; and a very interesting discussion took place over the numerous exhibits sent, as well as upon a *revue* abstract of his paper upon "Hybrid Conifers," by Dr. Masters, which will appear in full in the *Journal*. A cordial vote of thanks was given unanimously to Dr. Masters.

Mr. ELWES observed that it would be of assistance to the secretary if there were an unwritten rule that whoever contributed specimens, whether sent or brought to the meetings, should also supply as full details as possible, for preservation in the reports, which would finally be recorded in the *Journal*. He also thought that when a valuable series of plants was shown, as on the present occasion by Mr. Lynch, the most important at least should be preserved, as they might not even be in the National Herbaria. With regard to notes, &c., on specimens sent, Mr. HENSLAW observed that as a rule something was usually said about them, but too often of a very meagre description. What, however, would enhance the value of the reports would be for those who had observations to make at the meeting to send him a more complete account than is conveyed by the remarks which occur at the moment, if such should be thought desirable.

Hybrid Conifers.—Dr. MASTERS presented a paper on this subject, in which he remarked on the rarity of hybrid Conifers in Nature in spite of the profusion of pollen that is formed. This rarity he attributed to the fact that, in the old world at least, the forests consist mainly of one species. Allusion was then made to the various hybrids in the genus *Pinus* described by Beck, Wettstein, Mayr, and others, and to the so called hybrid between *Juniperus nana* and *J. communis*, in reference to which the speaker showed specimens of both forms taken from the same bush. *Biota medensis*, a supposed hybrid, is only a transitory stage of *Thuja orientalis*. The only two artificially produced hybrids known to the speaker are one raised by M. CROUX between *Abies Pinsapo* ♂, and *A. Nordmanniana* ♀, and another raised by the late HENRY DE VILMORIN between *Abies cephalonica* ♂, and *A. Pinsapo* ♀. Specimens of these hybrids, by the courtesy of M. CROUX and of M. P. DE VILMORIN, were shown. M. DE VILMORIN's hybrid *Abies* had produced cones, two of which were exhibited (see *Gardeners' Chronicle*, February 9), together with those of the parent plants. Last year a single fertile seed was obtained, whose progress will be watched with interest. Details relating to the external features and internal anatomy of these hybrids are given at length in the paper, which will probably be published in the *Journal* of the Society. Specimens of the foliage, and of the cones of the parent plants, and of the hybrids, were shown in illustration of the speaker's remarks.

Snowdrops Discarded.—Mr. H. LEWIS JONES, 61, Wimpole Street, sent some specimens of *Galanthus Elwesii*, with the following note:—"They were planted for three years. A top-dressing of manure was put over them in autumn. There was nothing wrong until this year, when a large number came up healthy, but the later members (about half of 500 in all) came up slowly, were yellowish later, and proved to be diseased. It seems to be spreading in both of my beds of bulbs. They are at the foot of a wall, with an easterly aspect. The soil is light, with a chalky subsoil." Professor FARMER undertook to investigate the nature of the disease, and specimens were also sent to Dr. W. G. SMITH, Yorkshire College, Leeds.

Cypripedium pubescens.—Mr. CROUX exhibited a dimerous flower of *C. insignis*, and a pale yellow-green leaf from the same plant. He remarked that these two features had been

constant on one and the same plant for three or four years. Though both peculiarities are not uncommon, it was unusual to find them on the same individual.

Gala-thus species.—Mr. ELWES showed flowers and foliage of G. Elwesii and the so-named G. Whittallii, pointing out that the latter is only a local variety of the former, with somewhat broader leaves and sepals, there being also a slight difference in the green colouring of the petals. He observed that G. Elwesii is a great seeder, and apparently in consequence fails to produce bulbils for propagation; such is also Mr. BARR's experience.

Mistletoe, vars.—Mr. BURBIDGE sent several varieties from the Botanical Gardens of Trinity College, Dublin, with the following observations:—"I beg to send five varieties of *Viscum album*, all, as I think you will see, slightly different in habit, size of leaf, &c., as also in earliness or time of flowering. You will observe that in all cases but one, the male plants have larger leaves than the females. Another point is peculiar about *Viscum* and its time of flowering—viz., the males in all cases flower a week or more earlier, or before the females, as is also the case in *Aucuba japonica* and some other dioecious plants. The male *Viscum* has foliage of a brighter green, while the females have leaves of a deeper and more sombre or sap-green colour. Amongst the female or fruiting plants of *Viscum* there is also considerable difference in size, colour, and time of ripening of the berries, as there is also in the time of opening of the male flowers, some individuals being weeks earlier in bloom than are others. The male *Viscum* has often in its young state on young Apple trees, or on the Mountain Ash, enormous leaves; but these become smaller as they begin to flower. The host-plant, soil, aspect, &c., may affect the plants, but there is also a considerable range of seminal or inherent variation. Note the beautifully regular dichotomous growth of the branches, all the twigs lying in the same plane, and the half twist in the leaf at the base."

PLANTS FROM THE BOTANIC GARDENS, CAMBRIDGE.

Mr. R. IRWIN LYNCH contributed the following interesting plants and notes, for which a unanimous vote of thanks was recorded:—

Iris histrioides.—This species is not recorded in Sir M. Foster's book, and is probably of more recent introduction.

Iris stylus.—A narrow form of this species, Mr. ELWES observed, was introduced by him in 1874, as *I. cretensis*, allied to *I. unguicularis*, exhibited by Mr. Bowles.

Galanthus Erithra.—Not mentioned by Mr. Baker.

Hyacinthus ciliatus (azureus).

Narcissus Trimon x. —Sir M. Foster's hybrid between *N. Triandrus* and *N. monophyllus*. It is the earliest of all in flowering this year. The preceding are flowering out of doors.

Cyrtanthus lutescens.—Mr. O'BRIEN contributed the following remarks upon this plant:—"Some time in 1893, I think, Mr. J. Medley Wood, of the Botanic Gardens, Durban, Natal, sent me a few small bulbs of a *Cyrtanthus*, afterwards described from a specimen which flowered with me by Mr. J. G. Baker in the *Gardeners' Chronicle*, June 9, 1894, p. 716, as *Cyrtanthus O'Brieni*. A reference to its interesting discovery on the Drakensberg I embodied in a note on "The Cape Flora" (*Gard. Chron.*, January 20, 1900, p. 33). Prior to that I got *C. lutescens* from the same region, and either at the same time as *C. O'Brieni* or soon after, a rather showy *Cyrtanthus* (also from the same region), which Mr. Baker said was nearest to *C. Tucki*, though it was a much nearer approach to the showiest forms of *C. angustifolius* than the original *C. Tucki* (not too well figured in *Gardeners' Chronicle*, August 6, 1892, p. 155), which, by crossing with *C. lutescens*, gave me *C. x Marian* (*Gardeners' Chronicle*, March 6, 1897), in describing which I gave also some other experiences with *Cyrtanthus*, which may or may not coincide with the experience of others. *C. O'Brieni*, imported, was always delicate, and ultimately died. Before that event, I had crossed *C. lutescens* with the Drakensberg species, allied to *C. Tucki*, and on its flowering I was pleased to find that it was practically identical with the imported *C. O'Brieni*, but much freer growing. I think it points to the probability of the wild *C. O'Brieni* being the result of a natural cross between the two plants, from which I got it at home. I think that view is strengthened by the fact that *C. O'Brieni* of Natal is only found in the one unfrequented spot, and, so far as I can glean, only in a small patch. All the plants referred to are of the *Monella* section of *Cyrtanthus*. I may say, in justice to Mr. BAKER, that the many points of resemblance between my *C. x Marian* and my *C. O'Brieni* go far to prove the correctness of the name 'variety of *C. Tucki*' given by him."

Urceolaria Clibranti (Mast., in *Gard. Chron.*, Sept. 23, 1899, page 239; fig. 83, page 251).—This is a bigener between *Eucharis grandiflora* and *Urceolina pendula*. Mr. ELWES called attention to the fact that the green tint characteristic of the *Urceolina* is only transitory in the hybrid, being present

in the bud but not in the fully developed flower. Mr. O'BRIEN added the following observations on the point. "The point commented on applies in a more or less degree to most hybrids—viz., the varying evidence of one or other of the parents in the different stages of the growth of the flower. In the buds of the *Urceolaria*, the yellow and green colours of *U. pendula* are strongly shown. So also is the form of the bud of *Urceolina*. As the flower matures, these characters gradually get obliterated by the influence of *Eucharis grandiflora*, until, in the mature flower, the yellow colour and most of the green has departed, and the white of the *Eucharis* asserts itself, the chief indication of *Urceolina* being the ventricose form of the perianth. The vanishing of the colour, where white or some of the fainter tints are used on the one side is, I think, a natural consequence, as the colour of the coloured species is mostly surface colour."

Dioscorea sativa.—This bears tubers (one of which was sent) at every joint, for a length of 40 feet. The tuber, which was globular, would send out a shoot 3 or 4 feet or more in length if kept indoors.

Kola acuminata.—A flowering shoot of this tree which bears the Kola nut. The calyx is orange coloured, the corolla is wanting, and the leaves are dimorphic, like that of the Fig, &c.

Alse sp. nov.—This is said to agree with specimens collected in Somaliland. It was taken to the Natural History Museum for identification.

Heterotoma lobeloides.—The Bird Plant of Mexico; the flower is remarkable for the receptacular tube extending as a beak in front, carrying two small sepals at the extremity, and the tubular corolla adherent to it throughout.

Cornus mas.—Flowering from the middle to the end of January, even on to March. *Hammelmis virginiana*.—Wych Hazel; the nut is eaten in Virginia, and is regarded as a valuable medicine there. *Hardenbergia Comptoniana*.—A very pretty climber for a greenhouse. *Siphocampylus lanceolatus*.—A quite uncommon plant. *Distacanthus scarlatus*.—A brilliant Bromeliad. *Crocus Imperati*, *C. Chrysanthus*, and *C. Sieberi*.—Winter-flowering species, now nearly over.

LINNEAN.

FEBRUARY 7.—Prof. S. H. Vines, M.A., F.R.S., President, in the Chair.

The President, whilst demonstrating the property possessed by certain vegetable liquids, such as Coconut-milk, and the juice of the Pineapple and the Potato, to cause the oxidation of guaiacum tincture in the presence of hydrogen peroxide, a blue colour being produced, drew attention to the recent researches of Raciborski on the subject. Raciborski has made the interesting discovery that certain tissues of the plant-body, more particularly the sieve-tubes and the laticiferous tissue, contain some substance, to which he gives the name leptomin, which likewise causes guaiacum to turn blue in the presence of hydrogen peroxide, and has gone on to infer that this leptomin may be regarded as discharging in the plant a function analogous to that of haemoglobin in the animal body. The President urged, against this assumption, that although both leptomin and haemoglobin give the guaiacum reaction, yet this fact does not prove that leptomin can combine with oxygen, and can act as an oxygen-carrier in the organism, in the manner which is so characteristic of haemoglobin; and that, therefore, the suggested analogy between the two substances is at least premature.

Mr. H. M. Bernard, M.A., F.L.S., read a paper, of which an abstract had been previously circulated, "On the necessity for a provisional nomenclature for those forms of life which cannot be at once arranged in a natural system." A discussion followed in which Prof. Ray Lankester, Sir W. T. Thiselton-Dyer, Mr. Bateson, Mr. Elwes, and Prof. Jeffery Bell took part.

It was proposed by Prof. Lankester, and seconded by Mr. H. J. Elwes, that the discussion be adjourned to another meeting, and that resolutions be framed for submission to that meeting when called.

KIDDERMINSTER HORTICULTURAL.

FEBRUARY 13.—At a monthly meeting held on the above date, a lecture on the subject of the Daffodil was given by Mr. Richard Dean, Ealing, the Mayor occupying the chair, and there being a large attendance of members. The subject was illustrated by a number of cut blooms of types and their sections, and by growing specimens in pots and ornamental bowls, lent by Mr. Sydenham, of Birmingham, to show how Daffodils can be cultivated within-doors. The lecturer dwelt on the history and development of the Daffodil, dealing with its improvement during the last thirty years; then went on to illustrate the various types and their sections by means of cut blooms; and passed on to the question of culture, the most suitable soils, their drainage when necessary, and preparation; then to the time of planting and how to plant, recommending beds in preference to solitary clumps on flower borders, dealing with after-culture and lifting when necessary. Early planting and early lifting consistent with ripening were advocated, and a few remarks were bestowed

on the diseases to which the Daffodil is liable, and any insect pests, happily but few. The process of hastening or forcing was described, and also culture in pots for early blossoms. The culture of the Daffodil as a commercial industry was described, and the extent to which it is grown in some parts of the country, both for cut flowers and dry bulbs, set forth.

READING GARDENERS' MUTUAL IMPROVEMENT.

FEBRUARY 11.—The fortnightly meeting of the above Association was held on the above date, when the President, Mr. Leonard G. Sutton, presided over a large attendance of members. The paper for the evening was upon "Greenhouse Flowering Plants for Summer Bedding," by Mr. F. Townsend, son of Mr. W. Townsend, the head-gardener at Sandhurst Lodge. The following varieties were strongly recommended for the purpose:—*Abutilons*, *Aloysias*, *Begonias*, *Bougainvillea*, *Cannas*, *Diplacis*, *Erythras*, *Fuchsias*, *Heliotropes*, *Habrothamnus*, *Hydrangeas*, *Lasiandra*, *Lobelia cardinalis*, *Nicotiana*, *Plumbago*, *Streptosolen*, *Salvias*, *Swainsonia*, and *Pelargoniums*. Four new members were elected.

ROYAL GARDENERS' ORPHAN FUND. ANNUAL MEETING.

FEBRUARY 15.—The annual general meeting of the supporters of this excellent institution was held on the above date, in the Essex Hall, Essex Street, Strand. About thirty persons were present, including most of the members of the Executive Committee, and Mr. H. B. May, chairman of that committee, presided.

A dutiful and loyal address of sympathy was sent to Queen Alexandra, Patroness of the Fund.

REPORT OF THE EXECUTIVE COMMITTEE.

"The Committee in presenting their Thirteenth Annual Report have pleasure in making the announcement that the steady progress reported in 1899 has been well maintained during the past year, the total receipts from all sources showing an increase on the previous year's revenue of over £100, whilst the Committee have also had the gratification of disbursing in allowances to the orphans the largest amount paid in any year since the Fund was established, viz., £1,033 12s. 6d., and their pleasure in the success of their efforts in this direction will, they are sure, be shared in by all supporters of the Fund. The amount disbursed in the form of grants in aid also shows a sensible increase over the amounts paid in previous years, and the Committee call attention to this fact as showing that those who have charge of orphans are taking a keener interest in rules 13 and 14, and thus more children are benefited by the Fund at the time when they cease to be chargeable to it, and require assistance in the purchase of clothing or tools when commencing to earn their own livelihood; while those waiting for election are helped as required, such assistance proving of the greatest value to those who receive it.

"The number of orphans who have been elected to receive the benefits of the Fund during the past twelve years is 127, and the total amount dispensed in allowances during the same period is £8,744 15s. The number of orphans now on the Fund is seventy, exclusive of those to be elected this day.

"The Committee desire to acknowledge with grateful thanks the receipt of £135 from the Reading and District Gardeners' Improvement Association, raised by the members and supporters of the Association as a memorial to the memory of the late Mr. James Martin, so well known among horticulturists generally as nursery foreman to Messrs. Sutton & Sons, and one of the most skilful of hybridists, as he was also one of the kindest natured and most intelligent of men. The right of voting in connection with the memorial will be exercised for fifteen years by the Association with which Mr. Martin was so closely identified.

"The Annual Festival held at the Café Monico, on May 8, under the presidency of the Right Hon. Lord Battersea, was an unqualified success, his Lordship's charming address on "Gardens and Gardening" and his eloquent appeal for enhanced support for the Fund, resulting in a subscription list which amounted to the gratifying total of £605 18s. The Committee have pleasure in recommending that Lord Battersea be this day elected a Vice-President of the Fund.

"It is with much gratification also that the Committee make the announcement that the Hon. W. F. D. Smith, M.P., has kindly consented to preside at the next Festival, which has been arranged to take place at the Hotel Cecil, on Tuesday, May 7.

"In view of the fact that the interest on Consols will be reduced at an early date, from 2½ to 2¼ per cent., the Committee considered it desirable to secure a more remunerative investment, and a favourable opportunity offering, the committee are pleased to be able to report that the trustees have sold £7,070 6s. 10d. of 2½ per cent. Consols for £7,127 14s. 9d., and re-invested this sum in the purchase of £7,240 15s. 10d. 3 per cent. London and County Consolidated Stock.

"The committee with deep regret record the deaths during the year of Mr. John Fraser, of Lea Bridge, and Mr. T. B. Haywood, of Reigate, the former of whom, as auditor, and the latter, as treasurer, rendered the Fund most valuable services in its early days.

"With keen regret the committee has to announce the retirement from their body of Mr. Richard Dean and Mr. Edwin G. Monro. The vacancies created by these resignations have been filled by the election of Mr. J. H. Witty, Highgate Cemetery, N., and Mr. J. W. Moorman, of Victoria Park, E. By the resignation of Mr. Dean, the Fund loses the valued services of one of its founders, who has been a member of the committee since its foundation, and one of the most regular attendants at its meetings, besides taking a most active part in securing contributions as local secretary for the Ealing district. Only his colleagues can fully appreciate what Mr. Dean has done for the Fund, but they ask the subscribers to recognise his services by according him a special vote of thanks.

"The members of the committee who retire by rotation are Messrs. J. Assbee, G. H. Richards, G. Gordon, P. E. Kay, J. F. McLeod, T. A. Morris, T. Swales, and W. Roupell; and Messrs. Assbee, Richards, Gordon, Kay, McLeod, Morris, and Roupell, being eligible, offer themselves for re-election. Mr. William H. Cutbush, The Nurseries, Barnet, is nominated by the committee for the seat vacated by Mr. Swales, who does not seek re-election.

"The committee again desire to record their grateful appreciation of the valued services rendered to the Fund by the treasurer, Mr. Sherwood, whose practical interest in its management, and most generous financial support, entitles him to the gratitude of every well-wisher of the Charity.

"To the auditors, Mr. Martin Rowan and Mr. P. Rudolph Barr, the committee also tender their warmest thanks for the good services they have again rendered in the audit of the accounts. Mr. Barr is the retiring auditor, and is nominated by the committee for re-election."

We have not space to print the cash statement for the year here, but it may be stated that the total income for the year was £2,552 0s. 9d. The sum invested exceeds £10,000. The expenses for the year include allowances to orphans, £988 10s.; Emma Sherwood Memorial, £13; grants in aid, £32 2s. 6d. The balance in hand, at bank, and on deposit, is £193 4s. 3d. The expenses of administration, including the salary paid to the Secretary, were only £187 8s. 5d.

PROCEEDINGS.

In moving the adoption of the report, the Chairman alluded to some of the chief features in the year's work, and said that in spite of 1900 having been a year when extraordinary demands had been made upon the public owing to the South African War, the income of the Fund had increased by more than £100. He read several letters from mothers and guardians, which showed how the assistance that had been rendered was appreciated, and by describing the circumstances of the recipients, gave the meeting an idea of the real good that is being done in the way of relieving acute poverty and distress. Mr. H. J. Jones seconded the resolution, and after a question referring to further investments had been answered, the report and balance-sheet was accepted with unanimity and keen satisfaction.

On the proposition of Mr. Geo. Gordon, seconded by Mr. R. Dean, Lord Battersea was elected a Vice-President of the Fund.

Mr. N. N. Sherwood was re-elected Treasurer, and accorded hearty thanks for his past services, on the proposition of Mr. Osman, seconded by Mr. Assbee.

The retiring auditor, Mr. P. Rudolph Barr, was re-elected, and accorded the thanks of the meeting. The members of committee stated in the above report as retiring, but offering themselves for re-election, were re-elected on the motion by Mr. Harry J. Veitch; and Mr. W. H. Cutbush was elected to the committee in the room of Mr. Swales, resigned.

The Chairman then moved a formal resolution, regretting that the committee was losing the services of Mr. Richard Dean, and referred in appreciative terms to the services Mr. Dean had rendered to the Fund since its establishment. Mr. J. F. McLeod seconded the resolution, which was carried unanimously; whereupon another member proposed that Mr. Dean be elected a vice-president of the Fund, and this was accepted. Mr. Dean, in returning thanks for the honour conferred upon him, said that he had taken an immense pleasure in the work of the fund. It had been a congenial work, and had he been younger—he is now 71 years—he would have remained at his post.

On the motion of the Chairman, Mr. Brian Wynne was re-elected Secretary with enthusiasm.

ELECTION OF ORPHANS.

Upon the meeting re-assembling at 4.30 P.M., the gentlemen appointed scrutineers reported that the following twelve children were duly elected to the benefits of the fund:—

HENRY CHARLES BEVIS	...	460 votes.
ARCHIE NICHOLAS	...	254 "
EVELYN OCKENDEN COOKE	...	234 "
ALBERT EDWIN GRANTHAM	...	215 "
MARY SEATON	...	155 "
MABEL ELIZABETH WOOD	...	152 "
ETHEL PAGE	...	151 "
HENRY HEBBLETHWAITE	...	142 "
VICTORIA LAVINIA RIDDLE	...	131 "
CHARLES GREGG	...	129 "
LAWRENCE E. X. S. SELDON	...	128 "
RHODA CHRISTIANA COOPER	...	124 "

At this stage of the proceedings, Mr. Harry James Veitch rose and pleaded that the Committee would, if possible, do something to render assistance in respect to a case to which his attention had been drawn by Mr. David Thomson of Edinburgh. The father had very recently died at the age of thirty-nine years, and had left a family of six children, the eldest of which was eleven years, and the youngest six months old. The father had been a most respectable man, but there was absolutely no provision left for the maintenance of his family. It was one of the hardest cases he had ever investigated.

The Chairman said that the finances of the institution were good, and the committee had taken into consideration the fact that several children who had been elected that day would only be eligible for relief from the fund for a short time as they were approaching the age of fourteen years. There had been two unsuccessful children at the ballot, and in addition to this case—Robertson—mentioned by Mr. Veitch, another case had been brought before the Committee too late to be included amongst those for election that day. If any member moved that these four additional candidates be placed upon the Fund by show of hands, the Committee would not resist it. Mr. Veitch immediately seized the opportunity, and after the resolution had been

seconded by Mr. Geo. Monro, and supported by Mr. Alex. Dean, it was accepted with unanimity and lively satisfaction. The names of the four children are—

JOHN HENRY DE GRUCHY,
JOYCE LUCY GAYTON,
DAVID ROBERTSON,
ROBERT W. PARKER.

Votes of thanks to the Scrutineers and to the Chairman concluded the business of the meeting.

THE FRIENDLY DINNER.

In the evening, at 6 o'clock, the members of the Committee and a few friends dined together at Carr's Restaurant. The Chair was taken by Mr. Herbert J. Cutbush, who was supported by Mr. N. N. Sherwood (Treasurer), and other gentlemen. The Chairman, when proposing the toast of the Royal Gardeners' Orphan Fund, said that since its institution in 1887, to commemorate the Jubilee Year of Queen Victoria's reign, the Fund had disbursed among necessitous orphans a sum of £8,747. There were now seventy children upon the Fund, exclusive of sixteen that had been elected that day Mr. N. N. Sherwood, in response, expressed satisfaction in respect to the past year's work. He was always glad when the Secretary announced to him that he had cheques to hand over, or when there was an accumulation of money to invest. He hoped all would do their utmost to bring the claims of the Fund to the notice of any who are not already subscribers, and that whatever form the memorial to Queen Victoria's memory would take, he trusted that in disbursing the vast sums that would doubtless be raised for the purpose, the cause of the poor little orphan children would not be forgotten. He was sure that the Queen would have desired that the cause of charity should be considered first, and related that a short time before her Majesty's death Princess Christian had said to a friend that they could get the Queen "to talk of nothing but the widows and orphans of her soldiers caused by the war in South Africa."

Other toasts included "The Secretary," "The Treasurer," "The Committee," "The Press," and "The Chairman." The musical part of the proceedings was excellent, songs being contributed by Messrs. Seegar, H. J. Jones, Poupard, John Frisby Berry (Roeampton), W. H. Webb, Grant (Putney), Petch, and Denman. Mr. Paul gave two cornet solos in fine style.

HESSLE AND DISTRICT GARDENERS.

MR. ALFRED GAUT, of the Yorkshire College, Leeds, has just completed a course of four lectures, given before the members of the Hesse and District Gardeners' and Amateurs' Mutual Improvement Society, to which also the public generally were admitted. The subjects chosen were:—

First—"The Roots of Plants: their Work, and How to Help Them."

Second—"Principles and Practice of Propagation."

Third—"Principles and Practice of Pruning."

Fourth—"Diseases of Garden Crops, Prevention, and Combative Measures."

All of which were capitally illustrated by lantern-slides. It was, of course, gratifying that so large and appreciative audiences turned up, as from sixty to eighty people attended the three first lectures, whilst fully a hundred attended on the last occasion.

Many questions were put to the lecturer by the members present, which were replied to by Mr. Gaut.

The Rev. M. Wordsworth Savoury, Vicar of Hesse, presided over the first three lectures; and the President of the Society, A. M. Jackson, Esq., presided on the last occasion. J. P. Leadbetter, Chairman.

Obituary.

SIR FRANCIS COOK.—The death is announced of this gentleman at Richmond, Surrey, in his 85th year. For acts of charity to the poor of Portugal he was created Viscount Montserrat. He was a well-known collector of works of art, and his gardens at Cintra, in Portugal, rank among the most famous in the world.

GEORGE GOODALL.—The other day there was borne to the grave in Corstorphine churchyard the remains of George Goodall, a well-known Scottish florist. Deceased, who was born in Musselburgh in 1823, commenced his career as a gardener at The Glen Nurseries, Joppa, under the late Mr. Thomas Handyside, and in 1854 was appointed manager to Messrs. Downie & Laird, West Coates and Pinkhill, and when the firm was changed, remained with Mr. Downie at the Beech-hill Nurseries. For the last forty years Mr. Goodall had acted as a judge at all the principal flower shows in the country, and inaugurated many improvements in the culture of flowers and plants. He was one of the pioneers of the Scottish Pansy Society and the Scottish Horticultural Association. *Edinburgh Evening News, Tuesday, February 19.*

[The deceased was one of the last survivors of the florists' school of Glenny, and he was a real gardener and genial man of affairs, and greatly respected by his employers. Ed.]



METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Wiswick, London, for the period February 10 to February 16, 1901. Height above sea-level 24 feet.

1901.		DIRECTION OF WIND.		TEMPERATURE OF THE AIR.				TEMPERATURE OF THE SOIL AT 9 A.M.				
FEBRUARY 10 TO FEBRUARY 16.				At 9 A.M.		DAY. HIGHEST.	NIGHT. LOWEST.	RAINFALL.		At 1-foot deep. At 2-feet deep. At 4-feet deep.		LOWEST TEMPERATURE ON GRASS.
				Dry Bulb.	Wet Bulb.							
SUN. 10	N.N.E.	deg.	deg.	deg.	deg.	ins.	deg.	deg.	deg.	deg.		
MON. 11	N.N.E.	39.0	37.8	43.1	35.6	...	38.4	40.5	44.1	25.1		
TUES. 12	N.N.E.	36.7	34.6	38.6	36.2	...	39.2	41.0	43.9	33.6		
TUES. 12	N.N.W.	31.1	28.0	37.0	25.1	...	37.8	41.0	40.9	16.7		
WED. 13	N.N.W.	33.1	32.0	36.2	30.6	...	38.4	40.5	43.9	23.6		
THU. 14	N.N.W.	28.0	25.7	33.9	20.7	...	35.8	40.1	43.9	14.6		
FRI. 15	N.N.E.	32.0	30.2	34.5	28.7	...	35.4	39.5	43.6	20.0		
SAT. 16	W.S.W.	34.0	32.9	43.1	25.1	0.07	35.3	39.4	43.6	17.0		
MEANS...	...	33.4	31.6	38.2	28.9	Total	0.07	36.9	40.3	43.5	21.6	

Remarks.—The weather continues dull, dry, and very cold. A small quantity of rain fell on the 16th inst.

THE WEATHER IN WEST HERTS.

The present spell of cold winter weather has now lasted more than three weeks, during which time there has not been a single unseasonably warm day, and but two warm nights. On the coldest day the highest shade temperature was only 1° above the freezing-point, and on the coldest night the exposed thermometer showed 19° of frost—or a lower temperature than any previously recorded here during the present winter. Both at one foot and two feet deep the ground is now very cold, the temperature at both depths being 4° colder than is seasonable. Snow or soft hail have fallen on most days, but only on one occasion was the ground completely covered. For a short time on the evening of the 19th, the flakes of snow were unusually large, varying from $\frac{1}{2}$ of an inch to 1½ inches in diameter. Small quantities of water have come each day through the bare soil percolation gauge, but through the turfed soil gauge percolation has entirely ceased for nearly a week. The record of bright sunshine has been, on the whole, unusually good for the time of year. E. M., *Berkhamsted, February 19, 1901.*

MARKETS.

COVENT GARDEN, FEBRUARY 21.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantums, p. doz.	5 0-7 0	Ferns, small, per	
Arbor-vitæ, var., doz.	6 0-36 0	dozen	4 0-6 0
Aspidistras, p. doz.	18 0-36 0	Ficus elastica, each	1 6-7 6
— specimen, each	5 0-10 6	Foliage plants, var.,	
Cannas, per dozen	18 0	each	1 0-5 0
Crotons, per doz.	18 0-30 0	Lily of Valley, each	1 9-8 0
Cyclamen, per doz.	8 0-10 0	Lycopodiums, per	
Dracenas, var., per		dozen	3 0-4 0
dozen	12 0-80 0	Marguerites, per	
— viridis, per doz.	9 0-18 0	dozen	8 0-12 0
Ericas, var., per doz.	12 0-36 0	Myrtles, per dozen	6 0-9 0
Econymus, various,		Palms, various, ea.	1 0-15 0
per dozen	6 0-8 0	— specimen, each	1 0-68 0
Evergreens, var.,		Pelargoniums, scar-	
per dozen	4 0-18 0	let, per dozen	0-12
Ferns, in variety,		— Ivyleaf, per doz.	8 0-10 0
per dozen	4 0-18 0	Spiræas, per dozen	6 0-12

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Asparagus "Fern," bunch ...	1 0-2 0
Carnations, per doz.	2 0-3 0
Gladioli, per doz.	2 0-3 0
Calliopsis, per dozen	9 0-12 0
Eucharis, per dozen	2 0-4 0
Gardenias, per doz.	1 6-2 6
Lilium Harrisii, per dozen blooms	4 0-6 0
Lilium lancifolium album, per dozen blooms	1 6-3 0
Lilium rubrum, doz.	3 0-5 0
Lilium longiflorum, per dozen	4 0-6 0
Lily of the Valley, per doz. bunches	6 0-12 0
Maidenhair Fern, per doz. bunches	4 0-8 0
Marguerites, p. doz.	2 0-4 0
Mignonette, per doz.	4 0-6 0
Odontoglossums, per dozen	6 0-9 0
Roses, Tea, white, per dozen	1 0-3 0
— Safrano, per dozen	1 0-2 0
— Catherine Mermet, per dozen	3 0-6 0
Smilax, per bunch	3 0-5 0
Tuberose, per doz. blooms	0 4-0 6

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, English, per bushel—	
cookers, large	4 0-5 0
various	2 0-4 0
Bienheim, bush.	4 0-6 0
— Nova Scotia, per barrel	12 0-18 0
— Californian, per box	9 0-10 0
— Wellingtons	4 0-7 0
Bananas, bunch	5 0-9 0
— loose, per doz.	1 0-1 6
Cobnuts, lb.	0 8-1 0
Cherries, case	16 0 —
Chestnuts, Italian, per bag	16 0 —
Grapes, Alicante, per lb.	0 9-1 6
— Colmar, A.	1 9-2 0
— Colmar, B. per lb.	0 8-1 0
Grapes, Almeira, doz. lb.	5 0-7 6
— Belgian, lb.	0 6-1 0
Lemons, case	8 0-9 0
Lyches, new, pkt.	1 0 —
Oranges, Navel	13 6-15 0
— Bitter, case	6 6 —
— Blood	7 6 —
— Murcia, case	6 6-7 0
— Tangerine, box	0 7-1 3
— Jaffa, case	10 0 —
— Valencia	11 0-16 0
Pears, French stewing, crates	7 6 —
— Californian Easter Beurre, half cases	9 0-11 0
Pines, each	2 0-4 0
Sapucaia nuts, lb.	1 3 —
Strawberries, per lb.	0 6-12 0
Walnuts, cwt.	38 0 —

VEGETABLES.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Artichokes, Globe, per doz.	3 6 —
— Jerusalem, sieve	0 9-1 0
Asparagus Spruce	0 10 —
— Paris Green, bun.	5 0 —
— home-grown, per bundle	8 0 —
— Spanish, bundle	2 3 —
Beans, dwf. Madeira, per bkt.	2 0-2 0
— Ch. Islds. and home, dwf., new, per lb.	2 0 —
— French, dwf., packets	1 0 —
— Barb. de Capucine	0 4 —
— Broad, bushel	1 8-1 6
Beet, per dozen	0 6 —
Broccoli Sprouts, bushel	0 9-1 0
Brussel Sprouts, per sieve	1 0-1 6
Cabbage, tally	2 0-3 0
— dozen	0 9 —
Carrots, 12 bunches — washed, in cwt. bags	2 0-2 6
— unwashed, in cwt. bags	2 0-2 6
— Italian, basket	3 6 —
Celeriac, per doz.	2 3 —
Celery, doz. bndls.	8 0-10 0
— unwashed, doz.	8 0-10 0
Chicory, per lb.	0 2 —
Cress, doz. punnets	1 6 —
Cucumbers, doz.	4 0-4 0
Endive, new French, per dozen	1 6 —
— Batavian, doz.	1 6 —
Garlic, new, lb.	0 2 —
Horseradish, English, bundle	1 6-2 0
— foreign, per bunch	0 9-1 0
Horseradish, loose, per doz.	1 6 —
Leks, per dozen bunches	1 6 —
Lettuces, French	1 3 —
Cabbage, doz.	1 3 —
Mint, per doz. bunches, new	6 0 —
Mushrooms, house, per lb.	0 10 —
Onions, picklers, per sieve	2 0-3 0
— per bag	3 0-4 6
— cases	8 0 —
— English, p. cwt. bag	5 0 —
Parsley, 12 bunches — per sieve	0 9-1 0
— Parsnips, cwt. bag	2 0-2 6
Potatoes, per cwt.	85 0-125 0
— New, per cwt.	10 0-12 0
— New French, lb.	0 2-0 3
— New Frame, Channel Islds., per lb.	0 4-0 6
Radishes, per 12 bunches	2 3 —
Rhubarb, Yorks, per dozen bundles	1 1-1 4
Salad, small, punnets, per dozen	1 3 —
Savoy, per doz.	0 6-1 0
— per tally	2 6-4 6
Scotch Kale, bush.	1 0 —
Seakale, doz. punnets	15 0-18 0
Shallots, new, p. lb.	0 2 —
Spinach, French, crates	3 6 —
Salsify, bunch	0 4 —
Tomatoes, Canary — deeps	2 0-3 0
Turnips, per dozen — in bags	1 6-2 0
Turnip tops, bush.	1 0 —
Watercress, p. doz. bunches	0 6-0 8

POTATOES

Various sorts, 55s. to 105s. per ton; foreign bags, 50 kilo., 4s. to 5s.; Dunbar Main Crop, 120s. to 125s.; Up-to-Date, 125s.; seed Potatoes in variety, list on application. John Bath, 32 & 34, Wellington Street, Covent Garden.

REMARKS.—Home-grown Spinach is off for a time, and that sold in crates is French. Cape Peaches cost per case of 30 to 25. 4s. to 8s.; Nectarines, per case of 30 to 35. 5s. to 7s.; Plums, per case of 30 to 40. 2s. 6d. to 5s.; the latter very good. Some Navel or seedless Oranges from California are very fine; and large Cucumbers are much cheaper.

SEEDS.

LONDON: February 27. —Messrs John Shaw & Sons, Seed Merchants, of Great Maze Field, Borough, London, S.E., state that there were but very few buyers on to-day's market, with scarcely any transactions passing. The wintry weather naturally checks the demand for Grass and Clover-seeds; meantime values all round show no important variation, the one exception being English seed, which is again cheaper. Further quantities of American Red are being sent back from Europe to the United States. Perennial Ryegrasses still tend upwards. Full prices are asked for Mustard and Rapeseed. Birdseeds move off slowly on last week's terms. The frosty spell renders values for Blue Peas and Haricot Beans. There is a fair reasonable demand for Scarlet Runners and Canadian Wonder Beans.

FRUIT AND VEGETABLES.

GLASGOW: February 20. —The following are the averages of the prices recorded since our last report:—Apples, Canadian Kings, 18s. to 22s. per barrel; Baldwins, Spies, Greenings, Russets, &c., 12s. to 18s.; Americans, various, 10s. to 16s.; Maine and Boston, various, 10s. to 15s.; Californian Newtown Pippins, 4s. 8s. to 8s. 6d. per case; 5s. 7s. to 7s. 6d. do.; Oranges, Valencia, ordinary, 420's, stamped paper, 8s. to 8s. 6d. per box; do., plain paper, 7s. to 7s. 6d.; large 420's, stamped paper, 9s. to 10s.; do., plain paper, 8s. 6d. to 9s.; extra large 420's, stamped papers, 10s. to 11s.; do., plain papers, 9s. 6d. to 10s. 6d.; large and extra large 714's, 12s. to 14s., all for sound fruit; Jaffa, 144's and 152's, 9s. to 10s. per case; Malaga, bitter, half-chest, 10s. 6d. to 11s. 6d.; Palermo do., 200's, 7s. 6d. to 8s. 6d.; do., 240's, 7s. to 7s. 6d. per case; Bananas, extras, 8s. to 10s. per bunch; No. 1, 6s. 6d. to 7s. 6d. do.; No. 2, 5s. to 6s. do.; Grapes, English, new, 1s. to 2s. 6d. per lb.; Mushrooms, 1s. to 1s. 3d. do.; Tomatoes, Canary deeps, finest medium, 3s. to 3s. 6d. per box; others, 2s. 3d. to 3s. do.; Onions, Globes, 5s. 6d. to 6s. per bag.

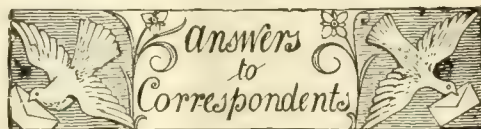
LIVERPOOL: February 20.—Wholesale Vegetable Market.

Potatoes, per cwt.: Lynn Greys, 3s. 8d. to 4s.; Bruce, 3s. 9d. to 4s. 3d.; Up-to-Date, 3s. 9d. to 4s. 3d.; Main Crop, 4s. to 4s. 9d.; Turnips, 8d. to 10d. per dozen bunches; Swedes, 1s. 2d. to 1s. 4d. per cwt.; Carrots, 2s. 2d. to 2s. 9d. do.; Onions, English, 5s. to 5s. 6d. do.; do., foreign, 3s. to 3s. 3d. do.; Parsley, 6d. to 8d. per doz'n bunches; Cauliflowers, 1s. 2d. to 2s. per dozen; Cabbages, 4d. to 8d. do.; Celery, 6d. to 1s. 3d. do. St. John's: Potatoes, 1s. to 1s. 2d. per peck; Cucumbers, 1s. 6d. each; Grapes, English, 1s. 6d. to 2s. 6d. per lb.; do., foreign, 8d. to 1s. do.; Pineapples, English, 2s. 6d. to 4s. each; Mushrooms, 1s. 3d. per lb.; Filberts, 10d. do. Birkenhead: Potatoes, 1s. to 1s. 2d. per peck; Grapes, English, 1s. 6d. to 3s. 6d. per lb.; do., foreign, 10d. do.; Mushrooms, 1s. to 1s. 6d. do.; Filberts, 10d. do.

CORN.

AVERAGE PRICES of British Corn (per imperial qr.), for the week ending February 16, and for the corresponding period of 1900, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1900.	1901.	Difference.
s. d.	s. d.	s. d.	s. d.
Wheat	26 1	26 4	+ 0 3
Barley	24 11	25 4	+ 0 5
Oats	16 8	17 7	+ 0 11



CORNYLINE INDIVISA SEEDLINGS: W. H. You should advertise them in this Journal, addressing your communication to the Publisher, Mr. Cove, 41, Wellington Street, Strand, W.C.

CORRESPONDENCE CLASSES: W. H. R. We have communicated with the gentleman named, but with no result.

FUNGUS: W. D. C. One of the Puff-balls, we cannot tell which in this state.

FUNGUS ON PALM LEAVES: W. S. The fungus is called Graphiola (Pestalozzia) phoenicis, figured and described in our issue for October 4, 1894, p. 429.

HAWTHORN TWIGS INFESTED WITH INSECTS: A. H., Hailsham. The Hawthorn twigs are almost covered with the black eggs of the Apple aphid or green fly (Aphis Mali). In all probability the insects infesting your Apple-trees were of the same species. Syringe with soft soap and quassia just as the buds are expanding.

INSECTS: Ashby. A minute fly, the grubs of which feed upon decaying vegetable matter in the soil, and as a rule are not injurious to living plants.

INSECTS GNAWING THE FOOTSTALKS OF BUNCHES OF GRAPES AND DEVOURING THE FOLIAGE: J. A. B. The beetle sent is the Vine-weevil, Otiorhynchus sulcatus, for the means of capturing which we may refer you to our issue for February 2, 1901, p. 84.

INSECTS LARVAE: J. W. The caterpillar of the Goat Moth, a most destructive insect. Hook them out with a curved wire thrust into the tunnels they make in the wood.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—J. W. A. 1, Pinus monticola; 2, Abies grandis; 3, A. nobilis; 4, A. Pinsapo; 5, Sequoia sempervirens, Red Wood; 6, Pinus excelsa.—A. M. B. 1 to 4, Codium (Croton) leaves vary so much that it is impossible to name them accurately from specimens sent. The hybrid Dracaenas, too, are subject to the same remark; 5 is probably Dracaena regalis; 6, D. pulcherrima; 7 and 11, D. terminalis; 8, D. ornata; 10, Begonia incarnata; 12, Davallia (Microlepia) hirta cristata.—W. C., Bath. Dendrobium fimbriatum.—G. Massey. Tussilago fragrans.—Orchids, Midlothian. 1, Cypripedium oenanthum superbum; 2, C. villosum; 3 and 4, hybrids of C. Spicerianum; 5, Oncidium macranthum; 6, Odontoglossum; 7, Coelogyne cristata Lemoianina. If you bisect a flower and an ovary of a Cypripedium bloom the point downward, you will easily see the tube leading from the stigma, and the surface there indicated is the place to put the pollen.—J. K. 1, Lastrea aristata variegata; 2, Osmunda cinnamomea; 3, Lastrea serra; 4, Blechnum polypodioides; 5, Adiantum Pacotii.—J. S., Nottingham. Stipa pennata (Feather Grass).—T. J. Acacia platyptera, W. Australia.

ONCIDIUM UNGULATUM: Veritas. The name is a synonym of O. tigrinum, La Llave et Lax, New Mexico.

RICHARDIAS DOING BADLY: Perplexed. The plants seem to have been injuriously affected by the rough treatment they received early in the autumn of 1899, when, as you say, they came to hand without any soil being attached to the tubers, and the foliage showed that they must have been lifted when in full growth. The foliage rotted off, and the development of the embryo spathes, as well as the leaves, was arrested thereby, hence the few and poor spathes obtained the next year. We do not consider you did wisely in putting these weakened tubers into heat; they would have done better had you adopted greenhouse or out-of-doors treatment. The green-coloured spathe is a natural variation—uncommon all the same.

TUBEROSES: Constant Reader. Procure the bulbs as soon as possible in the autumn, pot them firmly singly in 48's or 2 or 3 small 32's, using a moist, rich, loamy soil; place in a pit having a warmth of 70° by day, and 10° less by night, plunging the pots quite to or rather above the rims, in a bed of tree-leaves or tan, or over hot-water pipes having a warmth of 70° to 75°. Afford no water, or but very little, till the leaves appear. Two successive pottings may take place, or all may be potted at one time, and those not put into the bed at the first should stand on the damp floor of a greenhouse pit, so that there shall be no necessity to afford water to the soil. Batches may be selected from this stock of bulbs from time to time and put into heat, or they may remain in the pit and be brought on in the spring with but little bottom-heat or forcing. Slight bottom-heat is always desirable even with late-started bulbs, and may in the summer season be applied to Tuberoses growing out-of-doors with good effects, the warmth of a spent hot-bed being sufficient at that season.

VOTING OF PAID SECRETARY AND TREASURER AT MEETINGS OF A HORTICULTURAL SOCIETY: Rochdale. There is no hard and fast rule in this matter, although when the officials named are paid a salary for their services they are generally expected to stand aside when voting is in progress.

COMMUNICATIONS RECEIVED.—Frank Brunton—T. Elkes—C. B. S. Boston—W. A. R.—M. S.—G. H.—J. Grieve—J. Tancock—H. M.—A. H.—W. H. D.—H. K.—A. D.—J. O'B.—E. J.—E. C.—H. J. C.—K. D.—Harrison Weir—J. F. McLeod.—Dr. H. Roberts.—S. A.—A. O'N.—W. T.—W. G.—G. N.—M. A. R.—D. W.—G. N.—C. G. S.—Boston—G. H.—G. W. M.—M. S.—De E. Crawshaw—G. G.—Mertens & Co.—J. M.—J. W. B.—J. Gregory—H. T. M.—Lord A.

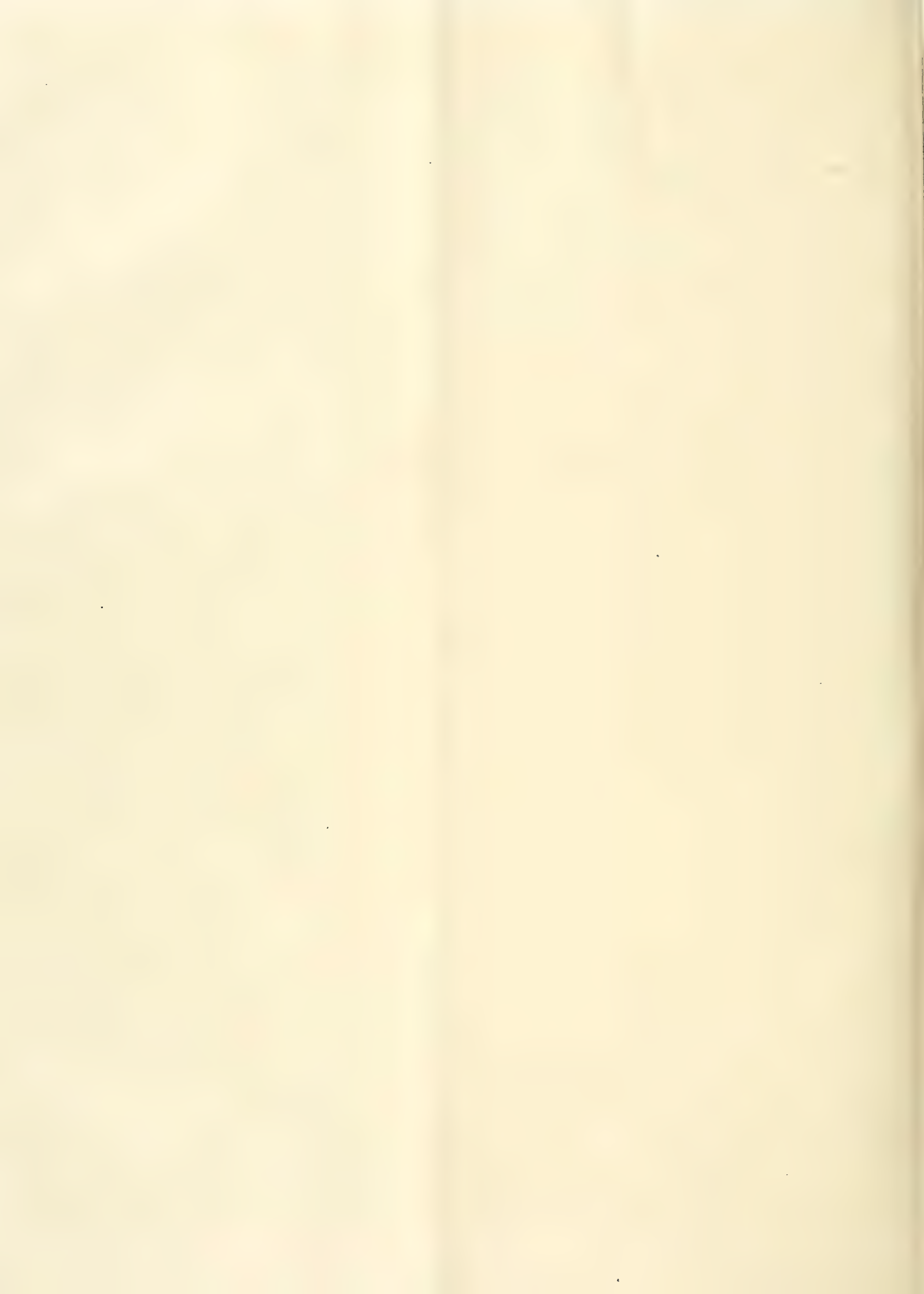
PHOTOGRAPHS SPECIMENS, &c., RECEIVED WITH THANKS.—A. D. W.—F. W. Meyer.

Continued Increase in the Circulation of the "GARDENERS' CHRONICLE."

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, AND ALL CLASSES OF GARDENERS AND GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.



BEGONIA "GLOIRE DE LORRAINE" IN THE GARDEN AT YEW BANK, KENLEY. PHOTOGRAPHED BY J. GREGORY.





THE

Gardeners' Chronicle

No. 740.—SATURDAY, MAR. 2, 1901.

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A GARDEN OF OLD-FASHIONED FLOWERS.

TWELVE years ago the cottage and garden belonged to a working market-gardener, who had obtained a comfortable subsistence from his early Broccoli, his early Potatoes, and the fruit of his Apple and Pear-trees. The southward slope, the protective hedges of Elder and Escallonia which he had planted round his land, and the nearness to the equalising sea, all gave that advantage which enabled him to obtain from his crops the enhanced prices which earliness affords.

Twelve years ago, one summer day, my friend, whom we called "Fleur-de-Lys," having been ordered from London for her health's sake, and happening to alight on the cottage, came to an arrangement with the old couple, by virtue of which she was to become the owner of the house and land, on the condition that they were to share the occupation during their lives. She made certain alterations in the cottage, knocking down a wall or two and enlarging one or two of the rooms, and also immediately set to work on the piece of land.

As she had a small competency, she did not wish to employ any of the ground as a market-garden. She therefore set aside a sufficient amount of land on which she might cultivate the vegetables required for use at home, and determined to convert the whole of the remainder into as fair a pleasure as she was able. The hedges of Escallonia and of Elder she, of course, retained, planting amongst the Elder many Rose-bushes: Rosa polyantha, Rosa rugosa, Rosa spinosissima, Rosa moschata, varieties of Sweet Briar, and others equally vigorous. The fruit-trees she also preserved, for the sake both of their produce and their beauty. She thus was handsomely handicapped, being presented at the start with two components of a beautiful garden for which one usually has to wait many years.

The cottage was placed nearly at the highest part of the land, and the only public roadway ran along the lower border. Fleur-de-Lys therefore had to decide whether she should construct a drive through the length of her little estate for the use of her occasional visitors who might journey the three miles from the nearest station, or whether she should make her guests dismount at the outer boundary and ramble thence on foot to the cottage. She chose the latter course, and accordingly built a stable and coach-house at the bottom of the garden, whence a sort of woodland path led upwards to the cottage. She decided thus, mainly in order to avoid all appearance of formality, her idea of a home being that outwardly it should bear to its surroundings much the same relation as that which a bird's-nest usually does. The great problems of "architectural" gardening, "landscape" gardening, and the rest, did not interest her. So simple and unpretentious was her little house that any attempt at terraces, clipped evergreens, and the like, would have struck a jarring note at once. Therefore, it is quite in keeping that beautiful flowers and beautiful shrubs border one's way right up to the entrance door; nor does Nature end there, for over all the outer walls are trained lovely and fragrant climbers—Clematis, Rose, and Honey-suckle—which give the idea that the cottage does indeed "nestle" in the garden. Not even the mild formality of a lawn will this fair rebel tolerate near her dwelling, and the only "beds" are within the boundary hedges of the kitchen-garden, which is itself invisible from the cottage.

It is an idea of Fleur-de-Lys that immediately she feels tied to a "house and garden," she will be irresistibly impelled to escape; whereas she has no desire to run away from a mere little nest placed in a flowery wood overlooking the beautiful eternal sea.

Yet it must not be thought that the result of this passion for "wildness" has been the creation of a mere wilderness of beautiful weeds. It is but an example of *ars est celare artem*. The delightful flowers and delicious fragrance which there feed the senses during nearly all the year are the product of constant labour and continual applications of skill and care:—

"There is a power in this sweet place,
An Eve in this Eden; a ruling grace,
Which to the flowers, do they waken or dream,
Is as God is to the starry scheme."

Formality there is perforce in the kitchen-garden, but even there it is concealed as far as may be; for on either side of the paths are great borders of interesting flowers separated from the vegetable plots by rose-covered screens and flowering hedges. And to the purely "hor-

tical" gardener there is as much interest in these borders as in the wilder plantation outside. *Harry Roberts.*

NEW OR NOTEWORTHY PLANTS.

PELARGONIUM INÆQUILOBUM, MAST,
*sp. n.**

IN spite of repeated correction, and even in spite of a Pelargonium Society, now defunct, the average gardener, and naturally the average layman, speaks of Geraniums when he means Pelargoniums. Pelargoniums have always in their natural condition irregular, or, as they are now called, zygomorphic flowers, provided with a tubular spur joined to the base of the sepal, whereas Geraniums always have regular (actinomorphic) flowers without any such spur or nectary. Geraniums proper are plants of temperate countries, and several are natives of this country. Pelargoniums abound at the Cape of Good Hope, a very few occur in Madagascar, Abyssinia, Australia, and the one we have now to mention occurs in the Usagara Mountains, in Eastern Tropical Africa, where it was discovered by Sir John Kirk, and in other localities in the same region by the late Rev. J. Hannington.

It was introduced to Kew in 1881, according to a specimen in the herbarium, but was not named. A few weeks since it was exhibited before the Royal Horticultural Society by Mr. Goodliffe, of the Cambridge Nurseries, Worthing, who tells us that seeds were sent by Mrs. Wray from the neighbourhood of Sagalla, about 33° 60' E. longitude, and 3° 60' S. latitude. The plant, as shown, has not much horticultural interest; but Mr. Goodliffe has, we believe, made use of it for hybridising purposes, which may or may not result in something of importance. At present the interest is chiefly botanical and geographical. The stem is somewhat shrubby below, the whole of the herbaceous portions thinly pilose, with straggling hairs; the leaves are three-lobed, the terminal lobe larger than the two spreading basal lobes, ovate lanceolate, two-lobulate in the centre; lobules remotely toothed. The stipules are deltoid lanceolate; flowers umbellate, three to five to the umbel; buds oblong, sepals ultimately reflexed, petals five, linear oblong retuse, greenish-yellow, with a small purplish spot at the base, double the length of the sepals. *M. T. M.*

ODONTOGLOSSUM × ADRIANÆ AUREUM.

A very distinct form of this pretty natural hybrid of *O. Hunnebellianum* and *O. crispum* has just flowered with Richard Ashworth, Esq., Ashlands, Newchurch, Manchester (gr., Mr. Pidsley), who kindly sends flowers of it. The flowers, which have the same peculiarity of undulated segments characteristic of *O. × Adrianeæ*, are of an uniform clear light yellow, the only other colour being a single small reddish spot on one or other of the lateral sepals, a still smaller spot in front of the callus of the labellum, and some very small reddish markings on the column, and the upper margins of the lip. The last-named feature is one of the most constant in this very variable hybrid, for whereas some varieties have a white ground colour, others a yellow, and the greater part are densely spotted over the greater part of their surface; even in the extremes of variation the dotted coloured decoration of the lip on each side of the column is present. *J. O.B.*

* *Pelargonium inæquilibrium* (Masters, sp. nov.).—Filosum, pilis strigiosis longiuscule patentibus; stipulis sub foliaceis deltoido-lanceolatis; foliis membranaceis cordatis, palmato-3-lobis, lobis basilibus late divergentibus ovato-oblongis acutis remote grosseque dentatis, lobo medio terminali majore conforme, 3-partito, lobulis lateralibus angulum acutum efficientibus; umbellis circa 5-floris, pedicellis fere bipollicaribus; alabastris linearibus oblongis obtusis; sepalis linearibus demum arcu reflexis; petalis patentibus obovato-oblongis retusis, viridi-flavescentibus basi macula; parva purpurascens notatis, sepalis dimidio longioribus. Specimen ex horto cl. Goodliffe apud Worthing descriptum. Ab omnibus popularibus foliorum forma differt. In montibus Africe tropice orientalis "Sagalla" unde misit domina Wray. In montibus Usagara Kirk! in lat. S. 2° 7'. Rev. J. Hannington!

ABIES LASIOCARPA, VAR. ARIZONICA.

THANKS to the courtesy of Mr. Henkel, of Darmstadt, we are now enabled to give an illustration of the very beautiful Arizona Fir mentioned in our previous issue, p. 126. The cone shown (fig. 52) is imperfectly developed. Seedlings from the same source or even from the same cone vary extremely in many Conifers, and so it is with the Arizona Fir. Some of the plants are much more silvery than others. The very beautiful specimens sent us by Mr. Henkel have thus received the name *argentea*. The foliage is very beautiful, and the thick, corky, cream-coloured bark very remarkable (fig. 53). It must be remembered that the species is that known in gardens as *A. bifolia*, or *A. subalpina*, and that it is quite different from the ordinary *lasiocarpa* of gardens, which is really a form of *A. concolor*.

STRAFFAN GARDENS, co. KILDARE, IN NOVEMBER.

To reach Straffan from Dublin you can either go by road, a distance of nineteen miles, or by rail, which is something less, and of course quicker, if you are tied for time. In either case you leave the river beside the quays, having Guinness' gigantic brewery on one side, and Phoenix Park on the other. By rail you leave King's Bridge Station, passing Clondalkin, Lucan, Hazelhatch, and Celbridge, and you reach Straffan in half an hour, that is to say, Straffan-station, for the demesne and gardens are two miles from the railway.

If you ride a bicycle and go by road, you enter at the main gate of the Phoenix Park, and go up the main road past the "People's Gardens," and the noble bronze statue to the late Lord Gough, F.M., past the Vice-Regal and the Chief Secretary's Lodges, and then bear away to the left to the Knockmaroon Gate, then to the right down the hill, and past the sunny banks known as the "Strawberry Beds," and so along the beautiful and fertile river-valley until Lucan, with its memories of Sarsfield, is reached, with its sulphur spa, ruined castle, and the modern home of the Veseyes, who now own the picturesque demesne. Leaving Lucan, you turn off to the left at the hotel, and then again to the right for Celbridge, and then you are on classic ground, rich in memories of Dean Swift and the immortal Vanessa. From Celbridge to Straffan is but a short ride of three or four miles, and you suddenly come upon the slender church-spire gleaming among the trees, the horse-shoe forge, and the pretty police or constabulary barracks, in the picturesque little village itself, all embowered as it is in the trees.

Passing the pretty church, you come to the entrance-gate of Straffan demesne on the right, embowered in Ivy and Dundee Rambler, or some other dear old cluster Rose. The rabbits are nibbling the short grass beside the drive, and scarcely trouble to get out of your way as the silent wheels glide past them; and in swerving suddenly into the narrow side-path leading to the garden-cottage, the wheels nearly went over a splendid cock-pheasant's tail, which chortled quite indignantly as it disappeared amongst the bushes. A gleam of bright sunshine came out, and illumined the tree-trunks and transformed the autumnal leaves, that stood out clear and bright all in a moment against a grey-blue sky.

Spring, summer, autumn, and winter, Straffan is always beautiful, but never more so, perhaps, than on a sunny autumn day, when the foliage of Beech, Oak, Lime, and Chestnut alike is warmed and intensified by the lowering afternoon sunshine. Mr. Bedford, the head gardener, met us, and we walked up to the terrace, and admired for the twentieth time the stately old weeping Larch, and the terrace-walk itself, with a spreading Evergreen Oak at the further end, and "seats beneath the shade." The terrace runs the entire length of the mansion, and overlooks the parterre, and beyond we have a glimpse of the "silvery

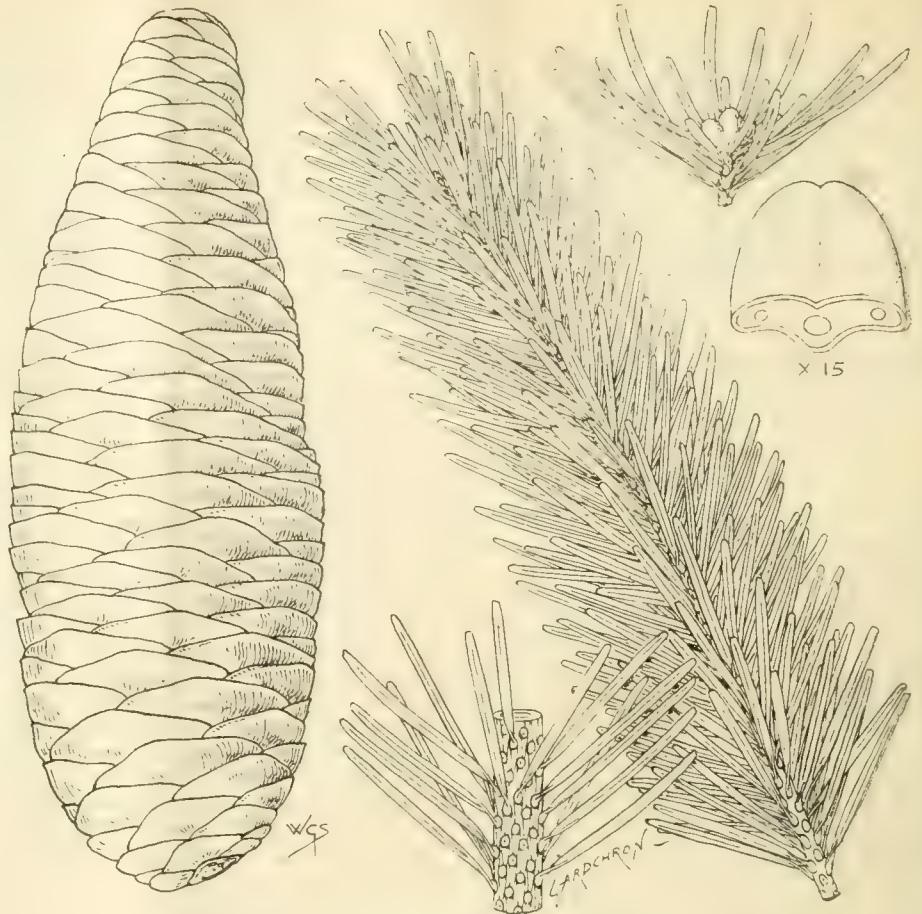


FIG. 52.—CONE AND FOLIAGE OF ABIES LASIOCARPA VAR. ARIZONICA:
LEAVES SILVERY.

Liffey," now swollen by the autumn rains. Just at the bottom of the lawn the river divides, the main stream going on to the fine old stone-arched bridge, which is a celebrated meeting-place for the local fox-hounds, and from which, also, the prettiest view of the house is obtained.

Beautiful at all seasons, it is during bright and sunny wintry days that the river banks are seen to advantage, they being then gorgeous with crimson Dogwood and with golden and cardinal Willows. The river branches off just below the lawn, and the diverging stream encloses a pretty island of con-



FIG. 53.—PORTION OF THICK CREAM-COLOURED CORKY BARK OF
ABIES LASIOCARPA VAR. ARIZONICA.

siderable extent, by looping round like the curved line of the letter D before it rejoins the main stream, and rushes towards the arches of the bridge before-mentioned. The island at Straffan is partly a grassy lawn and partly a wild garden. There is also a mossy-stoned rockery, overgrown with rare hardy and native Ferns, and Orchids, bulbs, and other exotic plants, including alpine and native species, elsewhere but rarely seen.

On this rockery grows still part of the original clump of *Narcissus Bernardi*, the first bulb that came to British gardens having been brought from

It is sufficient to say here that it is one of, even if it be not the most stately and beautiful, of all our native varieties of the genus *Orchis*. The island-garden at Straffan is reached by crossing a neat suspension bridge, the piers of which are at each end gripped and wreathed with "Ivy green" in a very pretty way. It is one of the simple joys of life, on a hot and genial May day, to lean over the cable of this little bridge and see the speckled trout lying cool and happy in the shade after their early luncheon, "none daring to make them afraid."

as to the weather as a visitor to Straffan, be it for good or for ill. November is the month of fruits at Straffan, rather than of outdoor flowers; and there is a big round bed of Davis' *Pernettyas* on the lawn here that would, as we think, satisfy their raiser, so healthy, and fresh, and fruitful do they appear, covered as they are with berries of all shades of colour between white and darkest chocolate, or crimson. Some of the rosy shades and pale rosy-purple tints are very lovely, and very useful to boot, as used for dinner-table and other indoor decorative purposes. Indeed, their berries look so clean, and so like their first-cousins, the true Cranberries, that one wonders how they would taste in a tart or in a pie. So long as the mild weather lasts, these pretty fruits are quite safe on the bushes; but Mr. Bedford tells me that so soon as the frosts come in real earnest, then he is obliged to protect the bushes with Strawberry-netting, or bid good-bye to his crop of "Prickly-Heath" berries for the year. The parent species, *P. mucronata*, came to us from Magellan in 1828, but nearly all the forms, and certainly the best forms or varieties were raised from seed at Hillsborough, in the co. Down, by Mr. L. J. Davis, and so we may, as I venture to think, fairly claim them as being Irish, and so really racy of the soil.

The "Peg-wood" berries are colouring; and *Cotoneaster frigida*—a sub-evergreen species from Nepal—is here 20 feet high, its branches being borne gracefully downwards, like those of a Bamboo after rain, by the sheer weight of its scarlet fruitage. Some of these lovely berries were once sent into a Dublin bazaar, arranged in bunches, or sheafs rather, along with the fresh green shoots and foliage of the broad-leaved Privet, and for several weeks afterwards I was pestered with inquiries as to the name of a "Privet, bearing bright scarlet berries?" I am quite sure that a large proportion of those to whom I told the real facts of the case never believed me, and that they still believe in a mysterious "scarlet-berried Privet," as growing in the Straffan demesne! Amongst other plants and shrubs, now in fruit at Straffan, is *Magnolia Lenzii*, one of the most beautiful and showy of all the spring blooming deciduous kinds. Here, at Straffan, it grows in a sunny and sheltered corner, and flowers most freely in the spring, and again more sparsely in the autumn. Scarlet hips on the Sweet Briars, as also on some of the dear old-fashioned Roses, for which this garden is deservedly famous, are just now very bright and beautiful in the fading sun-light of a typical November day. Bright and beautiful also are the lights and shadows that flit athwart the lawn, and that glance on the lichen-tinted stems of the fine and stately red-twigged Lime-trees, on the smooth and mossy lawn. And knowing the place as I do, "year in and year out," as the saying is, I cannot help asking myself: "Where is now the merry party?" that is to say, the host of golden Daffodils, and the sheets and clouds of Snowdrops, and the blue masses of Apennine Anemone, that make the lawn at Straffan a very paradise in the mild and genial days of spring. Ah! they are not dead, nor are they sleeping even; there is no rest for them. They are now rooting into the wet and genial soil of the flooded lawn, mysteriously transmuting dirt and death itself into the buds and foliage of that glorious resurrection that comes to us every spring-tide, without fail. If there really are "sermons in stones, and good in everything," then assuredly there is in bulbous-rooted flowers, some very potent sermons or lessons indeed.



FIG. 54.—*ROSA POLYANTHA*, STRAFFAN HOUSE, KILDARE. (SEE P. 134.)

the Pyrennes by the Hon. Mrs. Barton now many years ago. The giant Ostrich Ferns (*Struthiopteris*), the Bird's-foot, Maidenhair Fern of Canada (*Adiantum pedatum*), the bulb-yielding *Cystopteris*, the fresh green Welsh Polypody, as also the Irish form (*P. semi-lacerum*), rare male Ferns, and feathery lady Ferns, all grow most luxuriantly amongst the moist and mossy boulders in this sequestered little enclosure. The great "Kilmarnock Orchis" was grown here long before it was generally known elsewhere, but that is "another story," and one that would occupy a long chapter to itself.

But our mission is to speak of the garden, and so "to our sheeps must we return." I have seen this garden at nearly all times and seasons during the last twenty years, and in all kinds of weather, and I can assure my readers that Straffan weather may be represented by *x*, inasmuch as it is quite "an unknown quantity." Even Mr. Bedford, who has lived here for nearly a quarter of a century, and who is most observant, with aneroid, thermometer, rain-gauge, &c., will look cautiously at the sky, and at the vane, and at nearly all the points of the compass in fact, before he ventures to prophecy

"Say, what impels amidst surrounding snow
Congealed, the Crocus' yellow bud to blow?
Say, what retards, amidst the summer blaze,
Th' autumnal bulb, till pale, declining days?
The God of seasons—whose pervading power
Controls the sun, or sheds the fleecy shower;
He bids each flower his quick'ning word obey,
Or to each lingering bloom enjoins delay."

There is a low-lying or marshy spot on the island before-mentioned, where the best and hardiest of the Bamboos grow really well. *B. viridi-glauces-*

cens, *B. palmata*, *B. Simoni*, *B. nitida*, *B. japonica* form very strong clumps and masses, the finest being *B. viride glaucescens*, *B. palmata*, and *B. japonica*.

The native *Elecampane* (*Inula helenium*) is very handsome as growing here in the deep wet sand, as also is its first cousin, *Telekia speciosa*. Purple-leaved Plums (*Prunus Pissardi*) and golden-leaved Elder, yellow-barked Osiers and crimson Dogwood, also are effective here in the late summer and autumn months of the year. The great leaved *Gunnera manicata*, from Chili, also attains a large size here, its largest leaves being over 8 feet in diameter, and the plant itself is a very shapely one, as it grows in an exposed condition, with ample moisture at its roots, and plenty of sunshine and air.

We walked round the kitchen-garden, and admired the well-trained fruit-trees on the old brick walls, the fertile bush Apples, and the Violets in the frames in a sunny corner, that seemed redolent with the balmy breath of spring. Some beds of Lily of the Valley here were thickly covered with their erect spires of bright red fruits; in fact, sufficiently abundant to be quite ornamental. Time and space alone prevent our saying much more of this fine and interesting garden, being, as it is, one of the best in the county of St. Brigid—the county Kildare. *F. W. B.*

TREES AND SHRUBS.

AILANTUS GLANDULOSA (TREE OF HEAVEN).

MANY are the uses to which this noble tree may be effectively put in the flower garden or shrubbery. The tree is a native of China, and perfectly hardy in this country. Young plants grow with great rapidity when once established, and they bear hard annual pruning with impunity; and it associates well with sub-tropical plants, or when planted among Cannas, Montbretias, Fuchsias, &c. Propagation is readily effected by cuttings of the roots inserted in sandy soil in the spring. When well rooted, these pieces should be potted in rich soil, and got into rapid growth. Old established plants should be pruned annually, in order to keep them of the required height; and if moderate dimensions as regards the crowns when in active growth, the plants should be afforded water occasionally.

JASMINUM NUDIFLORUM.

As a winter-flowering plant, *Jasminum nudiflorum* is a very desirable shrub that should be met with in every wall climber or free-standing bush, left to ramble at will in the shrubbery or semi-wild garden. The bright yellow flowers which clothe the long shoots in the depth of winter, form a charming contrast with the sombre, green-hued evergreens. A rockery or a rookery are other positions where the beauties of the plant may be displayed, such contrivances being usually destitute of flowers at that season. Trained in pyramidal fashion, the plant is decorative in certain parts of a garden, having the effect of a fountain of golden blossoms.

In these gardens a fan-trained tree on a wall facing east was, on January 1 last, a perfect sheet of bloom. Pruning should be performed soon after the plant has gone out of flower; and in the case of plants trained against walls and fences, the shoots should be spurred, the required number of strong, well placed shoots being first laid in. If pruned on similar lines to the sweet Cherry on walls, good results will follow. Bushes, &c., should be sparingly pruned, and have the weakest spray removed. The flowering shoots may be employed in table decorations, taking the precaution to use small twigs of Box or *Retinospora* as a tracing on the cloth, or associated with the sprays in glasses. A pretty effect may also be produced by tracing a design with *Myrsophyllum asparagoides*, and lightly placing the long sprays of the Jasmine upon them. *H. T. M., Warwickshire.*

THE PROPAGATION OF FINE FOLIAGE PLANTS.

ALTHOUGH they are not cultivated so extensively as species which produce flowers suitable for cutting, plants possessing fine ornamental foliage are indispensable if there is house and table decoration to be done. The present is the best time to propagate fresh stock that will take the place of those plants which have become ungainly in size or of shabby appearance.

CODIÆUMS.

I should be writing against my feelings if I did not give the *Codiæum* (*Croton*) the principal place in the list of plants I propose to include in this article. I think am correct in saying that this exceedingly decorative plant is more often seen in our stoves than any other species usually cultivated in such structures. When propagating *Codiæums* I much prefer to root shapely and well balanced tops whilst on the plants by the process known as "ringing." This consists in removing a portion of the outer bark, say, a quarter of an inch deep round the entire circumference of the stem, and after the upper edge of the wound thus made has indicated by means of a swelling or "callus" that it will produce roots shortly, a little sand with a bandage of moss is tied lightly round the part from which the bark was removed. The roots will enter the moss and increase therein. When the roots have increased sufficiently to support the foliage, it being highly desirable to preserve every leaf, the young plants thus formed are taken off, and potted up into small pots and plunged into a close propagating-case, which should be kept close until the plants have become established. Some cultivators consider this a slow method, but I have always found it most successful. The rooting of cuttings of highly coloured *Codiæums* (in the tops of which there is exceedingly little chlorophyll) in the ordinary way is not always satisfactory, even if the very best means exist for the purpose.

The system of "ringing" is of special value when propagating plants that will be used whilst small for table or room decoration, because none of the leaves being lost, the young plants have large, finely-developed foliage at the base, and therefore are more effective in form.

CORDYLINES (DRACÆNAS).

These are very important plants in the furnishing of a mansion, and though very different from *Crotons*, they are equally useful. Before propagating *Dracænas*, split the stem by piercing it through the centre with a knife at a point where the leaves are good; then place sand and moss round as for *Crotons*, and roots will be produced from the point where the knife was inserted. The remaining portion of the stem of the old plant and the roots may be used if required. The stem should be cut into pieces of about 1½ inch in length, and the parts severed from the roots, and known as "toes," are useful to produce stock plants, or plants for subsequent topping. *Dracænas* raised by these methods are always deficient in colour, and they require to be topped at least once before the proper characters of the variety can be developed. The pieces of stem if laid in a sandy compost in well-drained pans and stood in a warm house will soon make nice plants, but like those produced from "toes," they require topping when sufficiently large.

PHRYNIUM VARIEGATUM.

When properly coloured this species forms a choice stove plant. Propagation is effected by division of the stools. The potting compost should be a very light one and porous, and when being used let it be well pressed home. This plant requires a partial drying off; but it must not be allowed to lose its leaves entirely, or difficulty will be experienced in getting the plants to start afresh. Sometimes when thus treated the leaves revert to a green colour, which is distinctly undesirable. A warm moist atmosphere is necessary for the plants, but they should not be watered overhead.

ARALIAS.

The graceful habit of the *Aralias* renders them exceptionally attractive, and for dinner-table no more elegant plant can be used. They are propagated by grafting. The stock most generally used is that of *A. filicifolia*, though until recent years *A. Chabrieri* was used for the purpose. The latter is now considered too slow in root-action. I have also used *Panax Victorie* successfully as a stock. The growth, however, upon this stock is slightly weak, and the leaves are produced at too long intervals for the best effect. *A. elegantissima*, *A. Veitchi*, *A. Veitchi gracillima*, and *A. Kerchoviana*, are four of the very best varieties in cultivation. A compost similar to that used for *Dracænas* is suitable for *Aralias*. It should be light and porous, and may be composed of peat, leaf-soil, and sand, with a few pieces of finely-broken charcoal. Care should be taken to secure good drainage, and potting should be done moderately firm. *J. F. McLeod, Dover House Gardens, Rotherhampton, S.W.*

(To be continued.)

NOTES FROM ISLEWORTH.

THE past year (November, 1899, to October, 1900) was less unfavourable than several recent years, and will be remembered in this district as having given us the finest Tomato harvest ever recorded in the open. Among Pear lovers it will, perhaps, have been more noticeable as a Marie Louise year.

Although a serious deficiency in the rainfall of the four "growing" months of the year lessened the productive power of vegetation in general, yet we never had any disastrous drought to contend with, as has been the case in every recent season. The good August rainfall, followed by a gloriously fine autumn enabled the tree-fruit to swell up to fair size, and to be gathered in the best condition.

Although a minimum temperature of 15° occurred in December, the ground at no time became frozen to any great depth, and very few losses were recorded among subjects of doubtful hardihood. I had to write down *Nerine undulata* as lost; but yet this bulb has proved hardy under much more severe cold in other localities, and had, in fact, survived several harder winters in my garden.

Many tuberous *Begonias* (bedding plants) also perished. I have satisfied myself, by experiment, that in dry soils these bulbs may be left out in the beds, with a slight covering, throughout most of our winters, unharmed; but they make such a late start into growth the following summer that the flowering season is postponed till September, which is too late. Serious losses also occurred among *Kniphofias*, for which I hardly think the cold can be altogether held to account.

The following plants of doubtful hardiness survived the winter absolutely unprotected:—*Iris Danfordi*, *Habranthus pratensis*, *Gymnothrix latifolia*, *Brodiaea aurea*, *Zephyranthes gracilifolia*, *Z. Andersoni*, *Crinum Moorei*.

The summer was remarkable for the great heat of July; the average maximum temperature for the month being 81°, and the absolute maximum 97°, both cases furnishing fresh records in my own observations.

September was a month of equable, serene, and beautiful weather, such as may only be experienced in England once in a lifetime. Summer may, in truth, be said to have lingered on throughout October, at the close of which month the dwarf Marigolds still made a blaze of gold in the borders.

The great gale of August 3 has been reported upon already in your columns.

I tested two new vegetables of some promise, which both have much to commend them if certain difficulties connected with their cultivation could be overcome. *Cyphomandra betacea* (Tree Tomato) carries its fruits freely enough, but will not "set" them outside till the latter part of July, which does not allow time for ripening. In an orchard-house, fruit could be picked all through the winter, and during this ripening period it is only

necessary to keep out the frost. The hard seeds are an unfavourable point, but the flavour when cooked is more "piquante" even than the Tomato, and only slightly inferior to it.

Oxalis crenata ("Oka" of Peru and Bolivia) produces underground tubers of small size, but excellent flavour, resembling the Apple when cooked properly; but having at the same time an acid taste like the Citron. This vegetable is universally popular with those who have tasted it, but the small size of the tubers is against its cultivation extending; still, judicious cultivation may get over this difficulty.

Mildew on *Chrysanthemums* seems extending every year, and no stringent steps are taken to eradicate it. At *Chrysanthemum* exhibitions, prizes are given to plants in the last stage of decrepitude from disease, and so long as this is done the disease will continue to spread into all the gardens in the country. The smoke-fog area round London also spreads year by year. The

had likewise copied, and so on into the dim mists of antiquity—the first of the series having been a guesser after truth, instead of a searcher.

In this case some freshly imported plants said to be from Madagascar, and resembling *Z. rosea*, were thought to be outside the genus *Zephyranthes*, on account of the fruit being distinct. Having had previous experience of faulty descriptions of fruits, I was not satisfied until I had fruited the true *Z. rosea*, when I found the plants belonged to the same species.

Hippeastrum procerum.—Seeds monotypic, and very remarkable in shape. I will furnish drawings shortly.

So many Hyacinths are recommended nowadays, that it is by no means easy to select, say, half-a-dozen distinct kinds of good habit for decorative purposes. The following half-dozen were selected in this garden as being the best among the moderate-priced varieties:—Gen. Pellisier, Leonidas, Mansfield, Lord Macaulay, Innocence, Czar Peter.

Among good plants for conservatory decoration, I find *Phaius grandifolius* one of the best. Not only does it last many weeks in bloom, but, under moist conditions of the air, it fills the house with a most delightful perfume, which is especially noticeable in the mornings, in a temperature of about 68°. Whilst in bloom it should be kept almost dry, and 60° should be the minimum temperature.

Crinum giganteum is also well worth growing for this purpose, and partly on account of its very floriferous nature. One day last summer I counted three flowering scapes issuing from one bulb, and bearing in all twenty-eight flowers. Some forms of this species are very fragrant.

Among rare plants new to my collection, noted as flowering this year, I find—

Cattleya Trianaei "Virginal" (Reich.), a very fine form.

Narcissus moschatus tortuosus, small, but very distinct.

Hippeastrum procerum, a true epiphyte on rock. *H. aulicum princeps*, a splendid thing.

Hemanthus Lindenii.—This is the finest species in the genus, superior even to *Katherineæ*, but difficult to flower.

Griffinia hyacinthina maxima.—First described, I think, by Messrs. Van Houtte. It is an improvement on the type as a garden plant, and carried with me seventeen flowers to the umbel.

Phedranassa viridiflora.—Of botanical interest.

Crinum Danieli (sp. nova).—Sent to me many years ago by Mr. Daniel Worsley from Guiana. Some persons considered this plant to be synonymous with the Indian *C. pratense* (notwithstanding its remote habitat), but it differs sub-generically from *C. pratense* in having contiguous stamens and funnel-shaped flowers. Its nearest ally would seem to be *C. Yemensense* among cultivated forms. It is a very interesting and distinct type, but of little horticultural merit.

Crinum crassifolium?—Sent as such from Holland, also flowered with me, but I could not distinguish this plant specifically from *C. longifolium*, although it was a very fine and large form.

Eurycles Cunninghamii.—Lasting a long time in bloom in the conservatory.

The following new plants were raised from seed in this garden, flowering during the year under review for the first time:—

Canna E. S. Griffiths.—A cross out of *Alphonse Bouvier*, and marking a great improvement.

Crinum Worsleyi (W. Watson).—An evergreen hybrid of *C. Moorei* by *C. scabrum*, with crimson-pink flowers.

Coleus (decorative section).—Seven crosses were named and figured by Mr. Moon. In one (*El Dorado*) the leaf is entirely gold and crimson.

Gloxinia Galveston.—One of the leopard type.

Naegelia Pekin.—Dwarf, vermilion-coloured flowers, marked with white.

Bidens delphinifolia.—A very pretty dwarf-growing annual, suitable for a raised position on the rockery, or for pot-work in cool-house. It carries flowers of deep yellow, edged light yellow, and in a cool-house will carry flowers till December. It is a Mexican species, and is known on the Continent as *Heterospermum Xanthi*.

Dahlia (single harlequin-marked).—*Maximilian*, yellow and white; *Cortez*, red and white. *A. Worsley*, *Isleworth*, *Middlesex*.

TROLLIUS.

THERE is no genus of herbaceous perennial plants, adorned with more quiet unpretentious beauty than the *Trollius*. When a boy, I used to admire and grow "europæus" in my little garden as the *Globe Ranunculus*, and loving it, wondered why it was little praised. Since then I have had other varieties, and once a number, but lost most during a dry, hot summer now years ago. But the old



FIG. 55.—BLACK-THORNS, STRAFFAN HOUSE, KILDARE. (SEE P. 134.)

sulphur-laden fumes of the fog of December 23, turned all copper and brass blue-black as far out as Isleworth.

The following plants were tested to prove whether they were true species, or to obtain descriptions of the fruit:—

Scilla hamorhoidalis, described in my *Notes on the Distribution of the Amaryllidæ* (Wesley, 95), p. 10.—Fruit turns canary-yellow before bursting, or falling, and discloses about five wrinkled black seeds, which are either nearly round, or the shape of a small slug. Germination takes place at irregular periods, spread over the best part of a year.

Zephyranthes rosea.—The fruit differs widely from the descriptions in standard works. In some cases there are not more than five ovules in a fruit, and the number of seeds varied in other cases from eleven, nine, or seven to the fruit, down to two or even one single seed. In these latter instances the seeds were almost round, and even when more numerous were always black, and slippery to the touch (as in *Pancratium*), and not at all winged or surrounded by a thin cartilagenous edge as in the other species of the genus. It would be far better in standard works to omit all description of seeds and fruit, than to insert unverified descriptions copied from some deceased writer, who in his works

Among Tulips, *Lady Grandison* still remains one of the best dwarf bedders. *Tulipa Kaufmanniana* is a fine border Tulip, early, and very hardy. Last spring the flowers expanded perfectly a few hours after an air temperature of 27° had been registered. *T. Greigii* I regard as the finest Tulip in cultivation. There are many colour varieties, one with a pure black base being the most beautiful. There is not the slightest difficulty about growing this precociously hardy plant; it only requires to be planted in suitable soil, and left alone.

Many disputes have arisen round the parentage or origin of *T. macrospeila*, the most fragrant of all Tulips, and the best "May" Tulip, in my estimation. It is, no doubt, a true species, and yet there is no record of its having been gathered wild anywhere. Is it not probable that it is a seedling form of *T. Didieri*, greatly improved by many generations of selection?

The race of garden Cannas continues to improve year by year. I do not think much of the *C. flaccida* race; at any rate, they are of little use for summer bedding. I pin my faith to the *Crozy* strain for this purpose. *Baronne Clara de Hirsch* is well worth growing, and is one of the most brilliant in colour. I have raised seedlings from *Mme. Crozy* indistinguishable from *Baronne C. de Hirsch*.

Cove has warmed and revived, and so again I shall collect. Among the present old and new, however, I miss a miniature slender-growing, almost unique plant. The bloom was small, and of a yellow-green, perfect in shape, and when stem-mounted, rarely attained a height of more than 4 inches. As a variety it was charming, and being always rare, I am afraid to our gardens it is lost. But happily other forms in varied size are in plenty, and all have a special attractive elegance of flower, habit, and foliage. How their rose-like blossoms glisten in the sunlight, as they bow and rise when the sweet soft summer air is moving! What a wealth of colour is there in a group of *Trollius Fortunei*, *flore-pleno*. How it dazzles the eye and enwraps the finer sense, and by such assertion, demands, as it were, admiration! What a lovely floral group can be made by planting gigantes as a centre, with asiaticus, the dark stemmed, crowned with orange, then, here and there, the Golden Globe, yellow-canary tinted, marbled by the old white *Napellus*, and this mingling with aurantiacus, deepened more by the touching presence of hybridus T. S. Ware, which, amid all these rising up fountain-like, should be the bright new form of "Rheingold;" aye, even if you cut away the flower, still the foliage is both ornamental and attractive.

Few of our garden floral gems deserve so much attention as the *Trollius*, and get so little. Yet it is my belief that ere long, like the *Pyrethrum* and others that are fashionable, it will, as it were, leap into favour, and if it does will doubtless for at least awhile hold its own against all comers. *Harrison Weir, Poplar Hall, Appledore, Kent.*

THE WEEK'S WORK.

FRUITS UNDER GLASS.

By MALCOLM MCINTYRE, Gardener to Sir CHAS. TENNANT, The Glen, Innerleithen, Peeblesshire.

Pot Vines.—Care must be taken that these do not suffer from dryness at the roots or in the atmosphere. If the roots are not finding their way over the pots into the fermenting-bed, place strips of zinc 3 or 4 inches deep round the top of the pots, inserting them just within the rims, and top-dress with a mixture of well-decayed manure and rich turfy loam in equal parts, and a small handful of Thomson's Vine Manure to each plant. Apply liquid-manure at the same temperature as the atmosphere of the house. Allow the soil to become fairly dry before affording more water; then thoroughly saturate it. Keep the roots moist at top and bottom of the pots where they may be on fermenting material. The earliest plants will now be at the "stoning" stage. Avoid cold draughts, which cause rust and harden the skin, so that the berries do not swell freely, and in some varieties cause cracking. Keep the lateral growths below the fruit closely stopped, but allow those above the bunches more liberty. Avoid overcrowding the trellis with foliage, as full light is necessary. Ventilate the house early in the day, admitting a little air when the temperature has reached 70°, increasing it with sun-heat to 85°; close the house in the afternoon, when the temperature is 80°, allowing an advance to 85°. Keep a sharp look-out for red-spider. On the first appearance, sponge the affected part of the leaves with weak soft soap and water, keeping the atmosphere duly charged with ammonia by damping all available surfaces with urine from the cow-byre, diluted with six times its bulk of water. Apply this liquid in the evening, but use it discreetly, at the rate of a gallon per dozen square yards. Paint the hot-water pipes with sulphur and skim-milk at the consistency of thin cream. If the first painting is not effectual, repeat the process in four or five days. This is also a good cure for mildew.

Early Muscats.—In most gardens one or two houses are devoted to this variety, the best of all Grapes. Assuming a house was closed by the early part of December, and the Vines started by the middle of that month, they will now be approaching the flowering stage. The night temperature may be raised to 65° or 70°, with a rise of 10° to 15° by day, closing at 80° in bright weather. When

the flowers begin to open, and pollen can be obtained from plants of Black Hamburg, the flowers must be pollinated by means of a large camel's-hair brush. This is very necessary in forcing all Muscat Grapes, especially the Muscat Hamburg, which is very liable to produce small seedless berries. Madresfield Court sets very much better, but it has not the flavour, nor in any case the high quality of the Muscat of Alexandria and Black Muscat. These two most desirable Grapes must be planted inside, particularly if they will be forced early. To have them ripe early in June, the Vines must be started at the time I have named. In order to ripen the wood well, and thus grow them perfectly, they need a warm inside border, and to be mulched. Avoid a dry surface upon the borders, as it causes the roots to descend in search of moisture and nutrition. It is often the case that Vine roots are found abundantly in the soil immediately beneath the drainage, instead of being in the border prepared for them because vines find there the uniform moisture they require.

Late Vines require a long season of growth to secure a good colour and ensure the Grapes keeping well. They should be fully ripe by the middle or end of September, and the Vines must be started not later than the beginning of March. Let the inside border be soaked with tepid water. If there are fermenting materials at hand, and a bed be made on the border, less fire-heat will be necessary. The rods should be sprayed with water two or three times a day. Maintain a night temperature of 50° to 55°, and 60° in the daytime, allowing a rise to 70° by sun-heat.

THE HARDY FRUIT GARDEN.

By C. HERRIN.

Gooseberries.—The pruning of the bushes should not be longer deferred, although in gardens where bullfinches and tomits take the buds, the pruning should not be performed before the buds are just about to burst. The bushes after pruning should be dressed with whitewash containing a considerable portion of soot as a preventative of attacks by the birds. Two methods of pruning are usually practised, one being similar to that described recently for the Red Currant, which need not be repeated here; the other, a very simple one, which affords the heaviest crops of fruit, consists in thinning out the branches, and leaving a considerable number of young shoots—these young shoots must not be spurred back to the old wood, but have merely the tips removed. All growths that hang downwards at the circumference of the bushes should be removed or much shortened. The bushes should be kept open in the centre by removing the older branches where crowded, which makes fruit gathering easier work, and lets in the sunlight. Young bushes should be pruned closer than those in bearing, until a foundation for the crown is obtained. In pruning the shoots, the terminal buds in some cases should point in an upward direction, and those at the side outwards and upward, the aim of the pruner being to lay the foundation of a well-shaped crown with the branches clear of the ground. Gooseberry-cordons fastened to stakes, walls, or trellises, afford large, well-flavoured fruit for the dessert, and are desirable where the labour of attending to them can be found. The side shoots of these cordons must of necessity be closely spurred-in to the base buds at the winter pruning, and the leading shoots cut back one-half or two-thirds of their length, according to strength. Cordon Gooseberries should consist of three or four main shoots taken up at about 9 inches apart. In southern counties some varieties do very well planted on a northern aspect, where they afford fruit very late in the season if suitably protected. The novelties Langley Beauty, Langley Green, and Golden Gem, should be grown for their excellent flavour, being in that respect improvements on most of the older varieties.

The Raspberry Quarter.—The points of Raspberry-caness being liable to perish from hard frosts when pruned early in the winter, the shortening of the canes to the desired length is deferred by some gardeners till the present time. At the same time any thinning-out of the canes may be seen to, and the same be tied to stakes or wire trellises. Assuming that the fruiting canes of last year were removed in the autumn, the number of young canes left may range, according to strength, from six to ten per stool, the longest being 6 feet in

height, and others from 2½ to 4 feet. If grown without supports, as in market-gardens, a height of 4 feet will suffice. The best method of affording support is by means of a strained wire trellis to which the canes are tied out singly, and a crop of fruit obtained throughout the entire length of the cane. Under this system single canes are planted at 2 feet apart in lines 5 feet or further apart. The common method is to drive into the soil midway between the stools a stout stake, 3 feet of which stands above ground, and to fasten five or six canes to each in the form of an arch with tarred string; sometimes a stake is placed to each stool, and the canes coming from the latter are tied to it. The canes of autumn-fruiting varieties should be cut down nearly to the ground. A new Raspberry quarter should be well manured, and then trenched 2 to 3 feet in depth. Work of this kind may still be carried out, but the canes should not be kept out of the soil for any length of time, or the roots allowed to get dry. Superlative is the largest-fruited and best red variety; other excellent varieties are Baumforth's Seedling, Carter's Prolific, and Norwich Wonder; while the old Semper Fidelis is an excellent variety for preserving, it being of a bright red colour, and with a slightly acid flavour. Among yellows, Yellow Superlative and The Guinea are two somewhat new and fine varieties. Newly-planted canes should be cut down to within a few inches of the ground level the first year. Digging among Raspberry quarters is never desirable further than to point it an inch or two in depth, and afford a mulch of half-rotten manure, renewing the materials later on if the season be a dry one.

Apricots.—The recent cold weather checked the expansion of the flower-buds; still, it is quite time that nets, &c., as protection to the bloom be got in readiness for use, but not put into use till the last moment.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HUSSEY PACKE, Esq., J.P., Prestwold Hall, Loughborough.

Violets in Frames.—Afford abundance of ventilation to the frames every day in mild weather, pulling off the lights entirely or partially when it is fine and warm, and tilting them either at the back or the front on rainy or windy days. Let the blooms be gathered almost daily; remove decaying foliage, and stir the soil once a week. When the soil is in need of water, do not wet the foliage, but apply the water by means of a water-can having a small spout, doing this in the forenoon, when the sun is shining.

Phrynium variegatum is treated somewhat differently to the ordinary run of plants. Here, it is given a thorough rest similar to Cannas. At this season the fleshy rhizomes are shaken out of the soil and potted, or they are placed in pans, according to the uses to which the plants are to be put, placing them in the stove. They soon begin to grow, and should be afforded abundance of light, in order to bring out the leaf tints.

Seeds.—Sow in gentle heat, in pots and pans, *Campanula pyramidalis* (Sion House var.), *Cox-combs*, *Celosia plumosa* for succession, *Asclepias curassavica*, *Diascia Barberæ*, *Marguerite-Carnations*, and *East Lothian Stocks*, in small pots for conservatory decoration.

Begonia Gloire de Lorraine.—Introduce into a temperature of 65° a batch of the earliest cut-back plants, in order that they may furnish cuttings at an early date.

Potting.—In order to expedite the work of potting of a mixed collection of stove plants, it is better to assort the plants which require much the same kind of compost into groups. For example, *Acalypha hispida*, *Ardisias*, *Codæums*, *Conocliniums*, *Ixoras*, *Dieffenbachias*, *Cyperus*, *Toxicophlæa*, *Reidia glaucescens*, *Ananassa sativa variegata*, *Strelitzia reginæ*, *Hibiscus*, and *Phrynium variegatum*, do best in a compost consisting of turfy-loam three-quarters, good sound peat one-quarter, with the necessary quantity of sand to keep it sweet and porous. *Dracænas*, *Aralias*, *Francisceas*, *Marantas*, *Pandanus Veitchii*, *Cyanophyllum magnificum*, require a compost of peat one-half, turfy-loam one-quarter, leaf-soil one-quarter, and plenty of sand. Do not afford large shifts, most plants being more benefited if manures be afforded instead, and the soil being retentive, plant food is retained until it is absorbed

by the plants. Manures should be applied in a weak state at frequent intervals, as soon as the pots become filled with roots, which obviates the necessity of using unsightly large pots. All pots of which use is made should be cleansed, properly crocked, and all potting soils in a suitable condition, and be firmly rammed into the pots, so far as regards plants of a woody texture, or which have hair-like roots. The potting of *Anthurium Andreanum*, *A. Scherzerianum*, *A. crystallinum*, *Asparagus plumosus*, and other species, should receive early attention. These *Anthuriums* are plants that possess strong roots, and should therefore be afforded an open compost, such as peat in fairly large lumps, charcoal, and a liberal quantity of sphagnum-moss, and pieces of sand-stone. The materials being well mixed together should be placed close up to the base of the plants. The plants require much moisture in the air and at the roots, and should be placed in the warmer part of the house, and be afforded copious syringings. The species of *Asparagus* should be potted in a compost consisting of loam three-quarters, and peat one-quarter, some silver-sand, and a 5-inch potful of steamed bones to every peck of the soil. In re-potting, place the plants sufficiently deep to cover the crown of roots an inch deep. When in growth, apply weak liquid-manure-water frequently. If seeds of *A. Sprengeri* be sown at this date, very graceful plants with drooping stems will be obtained, useful for planting in baskets. The plants should receive good soil, and be frequently dipped into the water-tank when grown in this manner. Such useful furnishing plants as *Oplismenus Burmanni* (*Panicum variegatum*), *Tradescantia bicolor*, quadricolor, &c.; *Sonerila margaritacea*, *Pellionia Davaeana*, *Isolepis gracilis*, *Pilea muscosa*, *Bertolonias*, *Fittonia argyoneura*, *Lycopodium denticulatum*, and other species, should now be increased in abundance by division.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bicton, East Budleigh, Devonshire.

The Main Onion Crop.—No time should be lost, as soon as the soil is in workable condition, in preparing the ground for sowing this important crop. Let a moderate dressing of fresh soot and wood-ashes be applied, and lightly dug in, and the surface roughly levelled, and trodden evenly all over, so as to give firm root-hold for the plants; then, with wooden rakes, collect all large stones and rubbish, making the surface level. The seed should be sown thinly in drills, made 1 inch deep and 12 inches apart, and the drills should be closed with the feet. As a last item in the operation, rake the plot crosswise of the drills, and if the land be very light, pass a wooden roller over it, otherwise, the tramping it receives when the drills are closed is sufficient. If it is preferred to sow the seed in beds with alleys between them, the former should be 4 feet 6 inches wide, and the alleys 1½ feet wide.

Onions Sown in the Autumn.—The plants will be the better for being transplanted at this season, planting them with a dibber 6 to 8 inches apart, in rows 12 inches apart, planting firmly, but not deeply; and if the tops are lengthy, no harm will be done if they are shortened a little. If the store of Onions is likely to run short, some of those which have begun to grow may be planted out, their leaves coming in usefully for various purposes in the kitchen.

Chives should be divided and replanted in rows at 6 by 9 inches apart, the best results being obtained by annual transplanting.

Parsnips.—As this root needs a long season's growth, the ground should be prepared betimes in the manner described in the *Gardeners' Chronicle* on January 25 last, the ground being now dug over with a fork half a spit deep, and raked level, and then trodden regularly all over. Sow the seed in shallow drills, drawn at 18 inches apart, dropping a few seeds at 6 or 8 inches apart. The drills should be filled in as for Onions, and a finish given to the land as in the case of that crop. Do not attempt to sow the seed on a windy day. If Parsnips for exhibition are required, holes should be made with an iron bar to the depth of 3 to 4 feet, and broader at the top than at the bottom, these being filled in with finely-sifted soil, and

three or four seeds dibbled in on the top. These roots should stand at about 1 foot apart in the rows, and be thinned to one plant per patch when of quite a small size.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. I. MEASURES, Esq., Cambridge Lodge, Flodden Road, Camberwell.

Hints on Work.—With the lengthening days and stronger light, the amount of water afforded the plants may be generally increased without fear of ill effects. The day temperatures with sun-heat may be considerably increased, and air admitted more freely than hitherto. The chief evil the cultivator has to guard against in this matter is to avoid direct draughts reaching the plants. If the houses are of modern construction, the ventilation is most likely so arranged that the outside air is made to pass between or over some of the hot-water pipes before reaching the plants. Where side-lights are used, the case is different, and it becomes a difficult matter to avoid draughts. The use of the ventilators in the roof should be avoided, for not only does their use endanger plants hanging in their vicinity, but they permit moisture which ought to be retained in the atmosphere to pass out of the house. Most Orchid cultivators are agreed as to the desirability of a free circulation of air when the conditions of the weather are favourable; and they equally recognise the necessity of retaining humidity within the house, and in order to secure these conditions, the lower ventilators of Orchid-houses at all seasons should be made use of in preference to those at the top of the houses. I find it better to use blinds in order to keep the temperature under, especially during the spring of the year. The time has arrived for blinds to be fixed to the roofs of the houses.

× *Epiphrontis Veitchi*.—This charming bi-generic hybrid is the best, probably, of the entire section of those with small flowers; and it was raised by Messrs. J. Veitch & Sons by crossing *Epidendrum radicans* and *Sophrontis grandiflora*. The hybrid possesses the intermediate characteristics of both species. With us at Camberwell the plant is scarcely ever out of flower, and it is such a free grower, that almost before one growth has finished flowering, others are developing their flower-spikes. I find that it grows freely if placed on a stage in the intermediate Cypripedium-house. As may be gathered from what I have above stated, it is a plant that is almost always growing, therefore, the potting material should be of such a nature as will meet the requirements of a plant that needs much water at the root at all seasons. The re-potting of the plant, when it is necessary, is done as soon as the plant has flowered, for it is generally about this time that the young growth which has been emitted from the base commences to make roots. Clean pots should be filled to two-thirds of their depth with clean crocks; the potting compost should consist of one part coarsely-broken peat to two of chopped sphagnum-moss, pressed moderately firm about the base, and finished off with live sphagnum-moss. The stock of this plant is readily increased, the side shoots emitted freely from the joints opposite to the leaves, which shoots may be taken off when the roots make their appearance at the base, and be potted into a mixture of chopped sphagnum-moss and coarse silver-sand. In order to make an effective display, several plants should be placed together in a shallow pan, and more especially is this necessary if required for exhibition purposes during the summer. It is advisable to select at the present season those plants which are beginning to push up flower-scapes, and which are in about the same stage of advancement, so as to acquire simultaneous flowering. The plants grow so freely that a stock of them sufficient to allow of selection may be procured in the course of a few years. They require a considerable amount of strong light, a fairly humid atmosphere at all seasons of the year, and should never be permitted to become dry at the root at any time. Thrips are its worst insect enemy, but even these may be kept in check by a system of fumigation at intervals of two or three weeks during the summer.

[Our correspondent objects to our interpolation of "Bamboo slats and reeds" in his Calendar (p. 106), but we can assure him from actual experience that these form as good shading material as those which cost much more money to purchase and fit up; and they may be obtained of any desired width of opening between the bars. ED.]

THE FLOWER GARDEN.

By T. H. SLADE, Gardener to Lord POLTIMORE, Poltimore Park, Exeter.

Lilacs.—Remove any suckers that may be growing from the base of the plants, as Lilacs afford a better effect and appear to flower more freely when grown with a clear stem of 3 or 4 feet. Select the best of the suckers if rooted, and after removing the lower buds plant the suckers in the reserve garden.

Propagating.—Continue to propagate bedding plants until sufficient stock is obtained for the summer bedding.

Pyrethrum aureum.—If plants be needed for bedding purposes, sow seeds in a little warmth, rather thinly, as the plants are liable to damp off whilst young. When the seedlings appear remove them to a light airy position near the glass, and when large enough prick them out into a frame or boxes.

Seedling Begonias.—Prick out these as soon as they can be handled into pans filled with light-loamy soil. Some old Mushroom-bed manure may be placed in the bottom of the pans. Afford a temperature of 60°, and the plants will acquire a useful size by the month of May.

Shrubby Calceolarias.—Seedlings of these may be treated similarly to the Begonias, but as soon as the seedlings are commencing to establish themselves in the soil, the boxes they are growing in should be placed in a cooler temperature, or aphies will check their growth.

Roses.—The early part of March will be a suitable time to commence the pruning of Roses, except in the north and midlands, where it may be deferred for a fortnight or three weeks later. It is not wise to defer the pruning too late, as it sometimes entails a waste of sap. The work should be done in favourable weather, and the cultivator must bear in mind what kind of blooms he wishes to cultivate. If large or exhibition blooms are desired, most varieties should be cut back to about two buds, and as far as possible these should be left on the outer side of the shoot, so that they may grow outwards, leaving the centre of the bush fairly open. Remove all weak shoots from the plants. These remarks apply to dwarf Roses, which are generally the best for affording large blooms—whether hybrid perpetuals or hybrid Teas. There are a few weak-growing sorts of the H. P.'s that may be left a little longer in pruning, such as Victor Hugo, Marie Baumann, &c. Hard pruning is sometimes recommended as inducing increased vigour in plants that do not make satisfactory progress, but if carried to the extreme in the case of some varieties it will have the opposite effect. To cultivate Roses in quantity for home purposes the shoots should be cut back to four or more buds, but some of the shoots on these plants should be pruned hard to keep the bushes in good shape. The constitution, weakness, or strength of constitution, possessed by different varieties, and the kind of stock the Roses are growing upon, are points to be borne in mind by the cultivator.

Standard H. P. Roses need the heads to be well thinned out. Afford stakes where necessary, and secure the plants firmly to them. Standard plants of Gloire de Dijon, W. A. Richardson, and others in this section should have their shoots left two-thirds of their length. If carefully pruned to encourage a pendulous form, these plants afford a very pleasing effect over turf.

Hybrid Teas and Tea Roses should be pruned much the same as the H. P.'s, many of the hybrid Teas are as vigorous as the H. P.'s, especially Caroline Testout and Clara Watson, both very fine additions to this class of Rose, as grown at Poltimore.

Roses on Walls and Trellises, &c.—The growth should be left nearly their full length. Remove only the soft tips of the shoots, but thin out all superfluous and weak ones.

General Remarks.—After prunings have been cleared away, carefully fork over the beds and cover in any manure left on the surface. If the top-soil of any bed is exhausted, carefully remove it to a point where the roots are visible, and top-dress with some good loam and a little bone-meal. Any vacancies that cannot be filled from the reserve garden now should be filled up later with pot-plants.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR MARCH.

SATURDAY,	MAR. 2	Royal Botanic Society, Meeting. Société Française d'Horticulture de Londres, Meeting.
SUNDAY,	MAR. 3	Horticultural Exhibition at Ghent.
THURSDAY,	MAR. 7	Linnean Society, Meeting.
MONDAY,	MAR. 11	Annual Meeting of the United Horticultural Benevolent and Provident Society.
TUESDAY,	MAR. 12	Royal Horticultural Society's Committee, Meeting.
THURSDAY,	MAR. 21	Linnean Society, Meeting. Royal Botanic Society, Meeting.
TUESDAY,	MAR. 26	Royal Horticultural Society's Committee, Meeting.
WEDNESDAY,	MAR. 27	Liverpool Horticultural Society, Exhibition.

SALES FOR THE ENSUING WEEK.

MONDAY and FRIDAY NEXT.—Standard and Dwarf Roses and Fruit Trees, Japanese and other Lilies, choice Perennials, Border Plants, Shrubs, Ferns, Palms, &c., at Protheroe & Morris Rooms.

WEDNESDAY NEXT.—Large consignment of Liliiums, Davallias, Tree Peonies, Aspidistras, &c., from Japan; Palm Seeds, Tuberoses, Roses, Fruit Trees, Perennials, Begonias, &c., at Protheroe & Morris' Rooms.—Roses, Shrubs, and Liliiums, from Japan; Palms, Border and Herbaceous Plants in great variety, at Stevens' Rooms.

FRIDAY NEXT.—Imported and Established Orchids, &c., at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—41.3°.

ACTUAL TEMPERATURES:—

LONDON.—February 27 (6 P.M.): Max. 50°; Min. 44°.

February 28.—Fine, mild.

PROVINCES.—February 27 (6 P.M.): Max. 48°, S.W. Ireland; Min., 35°, Shetlands.

The Sale of
Poisons.

The decision of the Court of Appeal in what is known as the Worcester Weed-killer case, reported in our last issue, is consistent with justice and common sense. The Court had nothing to do with the propriety or otherwise of selling poisonous substances literally wholesale without adequate safeguards against accidents. Their sole duty was to give their judgment on the point whether the County Court Judge before whom the trial was conducted in the first instance was, or was not, right when he gave judgment in favour of the defendant WHITE and against the Pharmaceutical Society. The ground taken by the Judge of the County Court, upheld by two Judges of the Divisional Court, and now affirmed by three Judges of the Court of Appeal, was that Mr. WHITE was not the actual vendor, but only the agent; and that he was in the position merely of canvasser for orders for the manufacturers, with authority to receive money on their account. It is needless to say that the evidence, as reported, bears out this view of the case.

This being so, the Pharmaceutical Society went the wrong way to work, and brought their action against the wrong person. Moreover, they seem to have adopted or sanctioned means of detection which are repugnant to the minds of average Britons. There is a discrepancy between the statement made by the Society's agent and that made by Mr. WHITE; but Mr. WHITE's version is in accordance with the printed circular taken in Mr. WHITE's shop by the Society's agent. In the circular relating to the Weed-killer are the words "J. H. WHITE, F.R.H.S., agent."

This is satisfactory enough so far as it goes, and it shows that nurserymen and seedsmen may act as agents for the sale of these poisonous

substances, but that they must not sell them themselves. They may take orders for them, but they must not execute these orders. Whether this restriction is really a serious grievance, we cannot tell, but we do not see why a nurseryman or a florist should be debarred from selling these poisonous substances in bulk or in the original packages, always provided that those packages are conspicuously and unmistakably labelled "Poison," and that every precaution practicable should be used to prevent the occurrence of accident. In any case, it would be fairer for the Pharmaceutical Society if they have, or think they have, a fair case, to direct their energies against the manufacturers and wholesale traders rather than to harass the retailers.

It is, or it was till lately, quite possible to purchase, retail, Weed-killer and other compounds used in gardens containing large quantities of poison without the slightest enquiry on the part of the salesman, and without any indication whatever that the contents were poisonous to human beings. Samples are frequently sent to us in this careless way.

A druggist, on the one hand, may not sell grains or drachms of such substances without various restrictions which no doubt he finds irksome, but which are essential in the public interest. A manufacturer, on the other hand, may, if we are rightly informed, sell them by the hundredweight or the hogshead without any restriction at all. It is true that when such goods are bought wholesale in this way that they are not usually intended for human consumption in any way, and the risk is in so far lessened, but it is certainly not abolished.

The recent experiences at Manchester, for instance, go to prove, and on a very large scale, what fatal results accrue from the employment of sulphuric acid which should have been, but was not, free from arsenic. Does anyone suppose that the brewers would have used that acid had they been warned that it contained arsenic?

Everyone wishes trade to be as unfettered as possible, but everyone wishes, even more strongly, to be protected against the possibility of accidental poisoning. The judgment of the Court of Appeal does not give much help in this matter; it simply enforces the necessity of not making a mistake by proceeding against the wrong party.

In order to protect themselves from the harassing and, as in the above case, ill-judged interference of the Pharmaceutical Society, traders should support the "Traders in Poisons and Poisonous Compounds for Technical and Trade Purposes Protection Society," of which Mr. DOBBS, 5 and 6, Clement's Inn, London, is Secretary.

NYPHÆA "DIANA."—This new hybrid is of American origin, having been raised between *N. Sturtevantii* × and *N. amplax*. *N. Sturtevantii* × is said to be a descendant from *N. Devonensis*, which has rose-coloured flowers, while those of *N. amplax* are yellowish-white. In the present hybrid the flowers are described as red, shaded with bright crimson. Our illustration (fig. 56) is taken from a plant grown by OAKES AMES, Esq., Assistant Director of the Harvard Botanic Garden, Boston, Mass., U.S.A.

LINNEAN SOCIETY.—On the occasion of the evening meeting to be held on Thursday, March 7, 1901, at 8 P.M., the following papers will be read: 1. "A Contribution to the Fresh-water Algae of Ceylon," by Messrs. W. WEST, F.L.S., and G. S. WEST, A.B., A.R.C.S., &c. 2. "On Mediterranean Malacostraca," by Mr. A. A. WALKER, F.L.S., &c.

ADVERTISEMENTS.—We are requested by the publisher to give place to the following letter, which, however encouraging in one sense, is depressing in another. It is lamentable to hear of so many gardeners wanting places:—"I can bear testimony to the value of your journal as an advertising medium, as in reply to an advertisement for a head gardener which I inserted in your issue of February 16, I received no fewer than 300 letters, of which many came from very competent men. I have appointed Mr. JOHN FAMES, of Sydenham Hill Road, to the post, and thought you would not mind publishing this letter as a notice to the unsuccessful applicants, as it is quite impossible to write to all. L. Brousson."

REMARKABLE FIND BY A GARDENER.—A gardener, whilst digging in the public recreation-ground at Faversham, on Wednesday last, came upon a tin, which, upon examination, was found to contain a cheque for £94, a large number of postal orders, and some rings and watches. The latest of the orders is dated ten years back.

CHLOROSIS IN PLANTS.—Recent researches by Dr. ROUX confirm the notion that the yellow condition of the leaves known as chlorosis is due to some deficiency in the chemical constituents of the soil. The liquid absorbed by the roots has an excess of lime, and a deficiency of potash and phosphorus. The consequence is a stoppage of the work done in the leaves, and of transpiration ending in the degeneration and death of the cells from starvation.

PHILODENDRON ANDREANUM, ETC.—From Mr. M. E. MILLS, Combe House Gardens, Croydon, we have received a spathe of this plant, leathery, white, convolute below, open above the centre, about 8 inches (or 20 cent.) long, 2 inches (5 cent.) wide, lanceolate, acuminate, contracted below the middle. The spadix is nearly the same length as the spathe, cylindric, club-shaped, cream coloured, the upper two-thirds densely covered with male flowers, the lower third thickly beset with female flowers. The leaves of this plant, as described in the *Revue Horticole*, 1886, t. 36, are 2 to 3 feet long, by 10 inches broad, elongate, cordate, lanceolate, acute, dark shining green, with coppery reflections. Our correspondent tells us that the plant is growing attached by aerial roots to the wood-work of the house, the base of the stem, 3 feet from the floor, having been cut off when the pot was removed three years ago.

ANNUAL DIANTHUS.—We have received from Herr ERNST BENARY, Erfurt, a large and handsome coloured plate, showing what are familiarly known as "single and double Pinks." There is a fine variety here; some are white, others pink, red, crimson, and there is a nearly black-maroon blossom; yet others, again, showing these same colours as streaks or flakes, or edges on a white ground. The picture suggests that our gardeners might do worse this season than spare a bed or border for a display of these fine and much varied annual Dianthus.

PRESENTATION.—It may interest some of your readers to learn that the friends of Mr. WM. SMYTHE, until lately head gardener at Basing Park, Alton, on Tuesday, February 19, presented him with a purse of gold, subscribed by the garden employees, domestic servants, and workmen on the estate, on his retiring from the management of Basing Park Gardens.

DEATH OF A JAPANESE BOTANIST.—We hear from Japan of the death of the eminent Japanese Botanist Mr. ITO KEISUKE, who died at Tokyo on the 21st inst., in his ninety-ninth year. Mr. KEISUKE worked on the Japanese flora with VON SIEBOLD and MIQUEL, and he was adviser to all the botanists who visited Japan in the past century. It is said that a high post-mortem rank will be conferred on him, as is the fashion amongst the Japanese.

COMING EXHIBITIONS.—The various horticultural societies in the provinces are completing their arrangements for the exhibitions to be held in 1901. Schedules already to hand include the following:—

Royal Horticultural Society of Southampton.—The report of the council states that for the first time for many years the assets exceed the liabilities by more than £60, of which sum over £40 is in cash, and in addition the sum of £50 is still on deposit at the bank. The prize lists for

hibitions at Wolverhampton have increased in importance year by year, and again the schedule shows that a considerable increase has been made in the amount of money offered as prizes. The first class, for instance, is certainly one that shows unusual liberality. It is for a group of plants arranged for effect on a space not exceeding 350 square feet, the 1st prize offered being £25; 2nd, £17 10s.; and 3rd, £10; total for the class, £52 20s. For 16 stove and greenhouse plants, £45 is offered; and for a collection of Orchids, £24.

1st prize for a collection of hardy garden flowers, arranged for effect, on a space of 6 ft. by 3 ft. In all, there are 110 classes, which include 10 open ones for fruit. Encouraging prizes are given for Grapes, as a 1st prize of £5 for four bunches. The rules of the Royal Horticultural Society relating to exhibitions will be strictly enforced. The inclusion of a "reference table," or index, is a novel feature in a schedule of this kind, but it will be very useful to exhibitors. The secretary is Mr. WILLIAM E. BARNETT, Snow Hill, Wolverhampton.

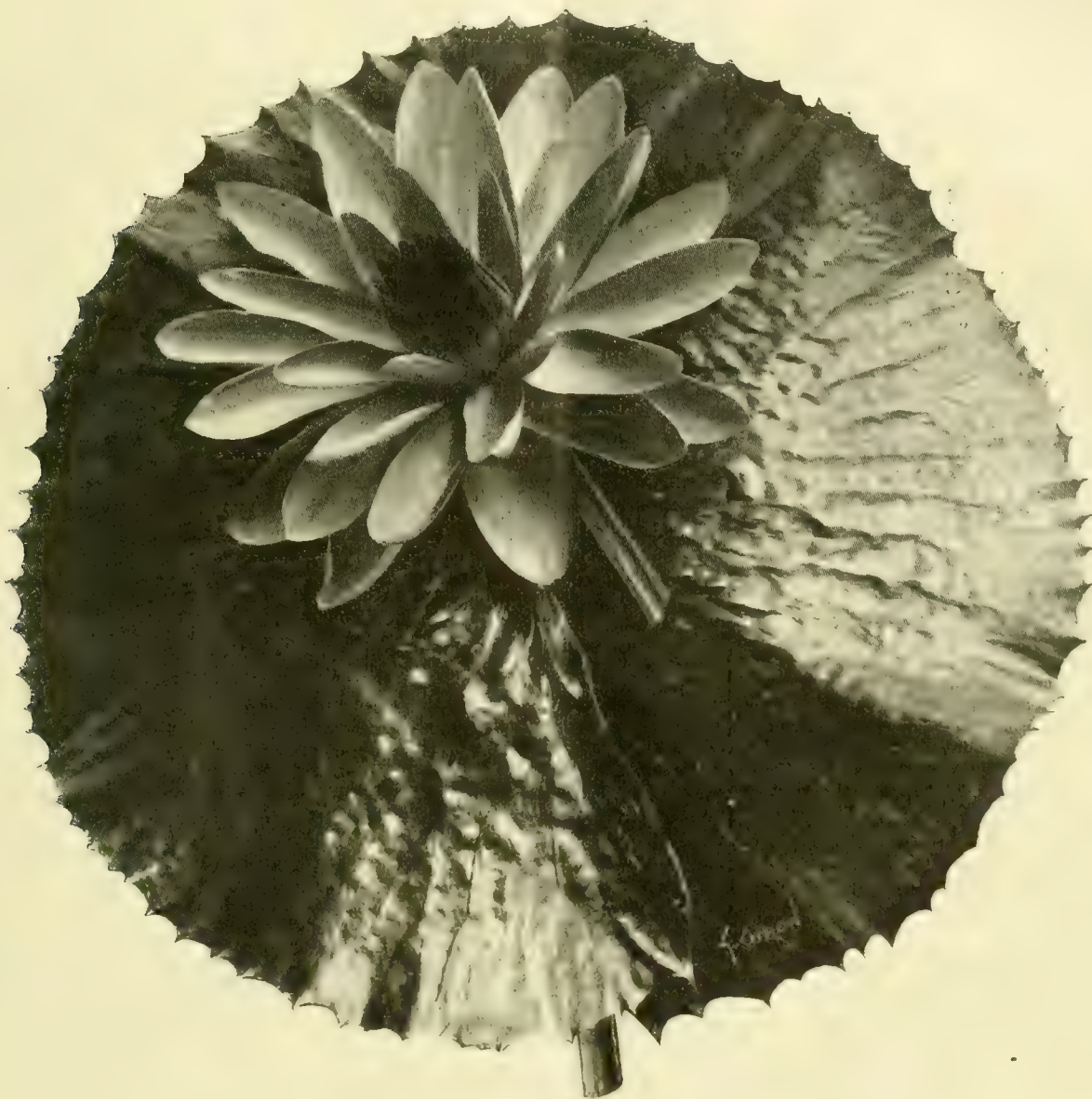


FIG. 56.—*NYMPHÆA "DIANA"*: COLOUR RED, SHADED WITH CRIMSON. (SEE P. 140)

The shows in 1901 have been increased. The Society lost fifty members during the past year, but gained sixty new subscribers. The summer show will be held on July 2 and 3, and there are forty-seven competitive classes as arranged for this event. The Chrysanthemum show will take place in the Skating Rink on November 5 and 6, and there will be several classes for Grapes, Apples, Pears, and vegetables. The secretary is Mr. C. S. Fudge, 6, College Terrace, London Road, Southampton, Hants.

Wolverhampton Floral Fête.—The thirteenth annual horticultural show to be held in the West Park, Wolverhampton, should be a very fine one. Conducted upon much the same lines as the shows of the Shropshire Horticultural Society, the ex-

hibitions at Wolverhampton have increased in importance year by year, and again the schedule shows that a considerable increase has been made in the amount of money offered as prizes. The first class, for instance, is certainly one that shows unusual liberality. It is for a group of plants arranged for effect on a space not exceeding 350 square feet, the 1st prize offered being £25; 2nd, £17 10s.; and 3rd, £10; total for the class, £52 20s. For 16 stove and greenhouse plants, £45 is offered; and for a collection of Orchids, £24.

FRENCH SOCIETY OF ROSARIANS.—We are informed that the fifth Congress of the Société Française des Roséristes will be held at Nice, on Tuesday, April 9, in the Palais d'Agriculture. This Congress, arranged in connection with the Société Centrale d'Agriculture, d'Horticulture, et d'Acclimatation de Nice et des Alpes Maritimes, will be presided over by M. VIGER, the President of the Société Nationale d'Horticulture de France. It will be coincident with an important horticultural exhibition established by the Concours Régional. The following are the subjects to be discussed at the Congress:—1. Classification. 2. Synonymy. 3. Use of manures in Rose-culture: when forced; and in the open air. 4. Different methods of budding Roses. 5. Hybridisation. 6. The

influence of the stock upon the graft. 7. Dimorphism and varieties due to this cause. 8. The best Roses for cultivating on the Mediterranean coast; their cultivation in the open air and under glass. 9. The best stocks on which to graft Roses in the South of France. 10. New or recently discovered means of combating the diseases of Roses. 11. Investigation of the merits of new Roses. 12. Study of newly introduced botanical species of the genus *Rosa*. 13. Adoption of the best varieties of Bengal Roses presented to the Paris Congress. 14. Study of the best varieties of Bourbon Roses. Rosarians desirous of discussing one or more of the subjects should communicate with the Secretary of the Society, and manuscripts must be forwarded to him by March 31 without fail. They should be addressed to M. OCTAVE MEYRAN, 59, Grande Rue de la Croix Rousse, Lyon.

POINT-JUDGING.—The French Chrysanthemum Society, after a full discussion at their congress held on November 3 last, and reported in *Le Chrysanthème*, adopted the following scale of points:—

	Maximum.
Colour	35
Form	15
Doubling	10
Size	20
Habit and foliage	20
Total	100

QUEEN OF EDGELY ROSE.—The Roses that we received from the Floral Exchange of Edgely, Pennsylvania, arrived in a beautifully fresh condition, but the flowers fell to pieces immediately they were unpacked. The method of packing was as follows:—The flower-stems, which were very long, were put in water in glass tubes with rubber caps, then wrapped in tissue or wax-paper, afterwards in cotton-wool, with an outside wrapping of paper, then securely packed in a box. This box was placed in the cool-room of the steamer *Lucania*. This room is, we believe, usually kept at about 40°. The delicious fragrance of the flowers was most noticeable, as also in the case of those exhibited more recently at the Royal Horticultural Society. The *Florists' Exchange* of December 29 last gives an illustration of one of the three new houses devoted to the culture of this Rose. The house measures 225 by 30 feet. They are model structures in every way, of light construction, with pipe-supports, extra bracing across the house, and 16 by 24-inch glass set the 24-inch way. The houses are even span, and have two panes of glass deep on the sides. The wisdom of this is strikingly apparent, as the house is very light, and the Roses on the bed at the north side are really the best in the house.

FERTILISATION OF CHRYSANTHEMUMS UNDER CULTIVATION.—In a recent number of the *Bulletin de la Société Botanique de France* there is a notice of a paper by M. R. GÉRARD, which says:—"The blooms of *Chrysanthemum indicum* and *sinense* are hermaphrodite, but arrive at maturity at different times; "dichogamous," the pollen ripens before the female organ has arrived at maturity. Cross-fecundation is therefore the rule with *Chrysanthemums*. The author gives some practical hints for obtaining the greatest possible measure of success with artificial fertilisation. The flowerheads chosen as seed-bearers should be treated directly they begin to open, the outer flowers usually possessing the maximum of the qualities sought for; the pollen should be furnished by old flower-heads selected, like the others, with care. Reasonable precautions and manual dexterity will ensure success. In fact, in spite of the opinion of some *Chrysanthemum* growers, artificial fertilisation of the plant can be practised without failure, and excellent results may be expected by thus securing new varieties superior to their predecessors."

DAFFODILS, AND HOW TO GROW THEM.—The *Boy's Own Paper* for March contains a coloured plate showing blooms of many varieties of Daffodils, and an article upon the plants and how to grow

them by Mr. W. WATSON, of Kew. The information given is (as, with this writer, we need hardly say) well worth reading by our men as well as by Our Boys, and no doubt the further chapters promised in continuation of the same subject will be equally worthy of the author and of the paper in which they appear.

AMERICAN ROSES.—An American visitor to one of our largest market nurseries says that the only stock that did not "compare favourably with the American-grown article" was the Roses. We could have wished the writer had been more explicit.

WEED-KILLER.—A case of suicide from drinking weed-killer lately occurred at Abthorpe, in the person of a servant-girl. No precautions could ensure immunity from such an "accident."

CULTIVATION OF TOBACCO IN IRELAND.—It is something like fifteen years since the subject of Tobacco-growing in England was broached, and the pages of the *Gard. Chron.* recorded a number of experiments, and suggestions and instructions were invited. The result was that here and there, under favourable conditions, fairly good samples of Tobacco were grown, dried, and smoked, and came under the notice of the exciseman! When this gentleman appeared, further progress was stayed, and the industry came at once to an end. The prime mover in the matter in Ireland appears to have been Col. EVERARD, D.L., at Randlestown, Co. Meath, who has been engaged in the cultivation of the plant during the past two years, and his crops are stated to give abundant proof that Tobacco-growing and manufacture can be made a profitable business. The Department of Agriculture and Technical Instruction for Ireland (whose *Journal* is our authority) says of last year's crop that the result of Col. EVERARD's experimental plot justifies a further trial in the present year, more especially as the growers in each "centre" will render every necessary assistance. The cultivation of the "weed" in Ireland was the subject of a question in the House of Commons on Monday last by Mr. J. CAMPBELL (Armagh, S.), which was answered by Mr. GERALD BALFOUR, who said that experiments in Tobacco-culture were carried out by the Department of Agriculture in fourteen counties last year, with results sufficiently satisfactory to justify further trials this year. So far, only the stages of drying and fermenting in regard to last year's crop have been reached, and until the manufacture is complete it would not be possible to give figures as to the cost of cultivation, &c.

PUBLICATIONS RECEIVED.—*Foul Brood of Bees*, by F. C. Harrison, Ontario Agricultural College (Bulletin 112).—From the Agent-General for New South Wales, 9, Victoria Street, S.W., come the following booklets: (1) *The Timber Resources of New South Wales*; (2) *The Climate of New South Wales*; (3) *Fauna of New South Wales*; (4) *Mining Industry of New South Wales*; (5) *Forty Years of Progress in New South Wales*; and (6) *Agriculture in New South Wales*. These pamphlets are all by T. A. Coghlan, and well worth study by all interested in the welfare and growth of the country.—From the United States Department of Agriculture, Division of Botany, *Contributions from the United States National Herbarium*, vol. vii., No. 1. Issued December 31, 1900.—*Monograph of the North American Umbelliferae*, by John M. Coulter and J. N. Rose. From the Division of Agrostology, Bulletin No. 24.—*Studies on American Grasses*, 1. Some Recent Collections of Mexican Grasses, by F. Lamson, Scribner, and Elmer Merrill; 2. Notes on *Panicum nitidum*, *P. scoparium*, and *P. pubescens*, by the same authors; 3. Miscellaneous Notes and Descriptions of New Species, by F. Lamson, Scribner, and Carleton Ball.—*Journal of the New York Botanical Garden*. Editor, Daniel Trembley Macdougall. Contents for January, vol. i., No. 1; the Museum Building (with illustration); Co-operative Forestry; Etiolated Plants as Food (with figure); Mycorrhizas of Orchids (with figure); and other notes.—*Transactions of the English Arboricultural Society*, vol. iv.,

part 3, compiled by John Davidson, secretary and treasurer, contains papers on Different Methods adopted in the Measurement of Standing and Felled Timber, by Tom Bright; Planting, Maintenance, and Management of a Plantation for the first Twenty-five years, by J. E. Dalglish; Felling and Barking of Oak and Larch Timber, &c., by A. J. Ross; and similar contributions.—*Transactions of the Royal Scottish Arboricultural Society*, vol. xvii., part 2; this includes the address delivered at the forty-seventh annual meeting in January, 1900, by the Earl of Mansfield; a paper on British Forestry and its Prospects, by John Nisbet; and other articles of similar scope.

PLANT PORTRAITS.

A. HILLEA MONGOLICA and *A. PTARMICA*, EL.-FL.—*Die Schönsten Stauden*, Lief. 7.

AQUILEGIA HYBRIDA.—*Die Schönsten Stauden*, Lief. 6.
ASTER TANACEIFOLIUS, Kunth, in "Humboldt and Bonpland." Flowers violet coloured; leaves finely, minutely cut; widely distributed in the west of North America. *Mechan's Monthly*, January.

BEGONIA GLOIRE DE LORRAINE.—*Revue de l'Horticulture Belge*, February.

BROSSONETIA KAZNIOKI.—*Sc. Select. Horti. Thensis*, t. 45.
CALOTHAMNUS RUPESTRIS.—*Sc. Select. Horti. Thensis*, t. 47.
CANDOLLEA ADNATA VAR.—*Sc. Select. Horti. Thensis*, t. 43.
CHRYSANTHEMUM CHARLES JOIN.—*Amateur Gardening*, February 2.

CHRYSANTHEMUM MAXIMUM.—*Die Schönsten Stauden*, Lief. 9.
ELAEAGNUS UMBELLATA, hardy shrub. — *Revue Horticole*, February 16.

ERIGERON COULTERI, E. SPECIOSUS, and E. ACRANTICUS.—*Die Schönsten Stauden*, Lief. 8.

ERYNGIUM ALPINUM and E. MARITIMUM. — *Die Schönsten Stauden*, Lief. 6.

GAZANIA SPLENDENS.—*Amateur Gardening*, February 16.

GORDONIA LASIANTHUS.—*Sc. Select. Horti. Thensis*, t. 41.

HARPALICUM RHIZOM and *COREOPSIS GRANDIFLORA*. — *Die Schönsten Stauden*, Lief. 7.

HESPERIS MATHONALIS VAR. and *ARABIS ALPINA*, FL.-PL.—*Die Schönsten Stauden*, Lief. 7.

INULA GRANDIFLORA and I. MACROCEPHALA.—*Die Schönsten Stauden*, Lief. 8.

JACQUINIA AURANTIACA.—*Sc. Select. Horti. Thensis*, t. 44.

KENNEDYA AUTOMARIENSIS.—Raised at St. Omer as a cross between *Kennedyia bimaculata* (= monophylla) and *K. Maryatae*. The plant is like *K. monophylla*, but the flowers are rose-coloured. *Revue de l'Horticulture Belge*, February.

LELIA GRANDIS TENEROSA.—*Revue Horticole*, Feb. 1.

PHLOX PERENNIS VAR. — *Die Schönsten Stauden*, Lief. 7.

PHENOCOMA PROLIFERA.—*Sc. Select. Horti. Thensis*, t. 42.

PREMNA SCANDENS.—*Sc. Select. Horti. Thensis*, t. 49.

NURSERY NOTES.

MESSRS. CARTER'S PRIMULAS.

THERE may be seen at the present time at Messrs. J. Carter & Co.'s Nursery, at Forest Hill, near London, a very fine display of varieties of *Primula sinensis* in bloom. It is a show that may well encourage cultivators who have to make the best of conditions common to an urban district, for Forest Hill has long since provided facilities for the enterprise of the builder, and as the builder, like every other person, does not do all his work at one time, the evils from the point of view of the cultivator are cumulative.

When, therefore, London suffers from any of its common ailments, semi-darkness when there should be light, detained smoke, and the less common but more detested fog, Forest Hill is always more or less in sympathy, and those responsible for the cultivation of the *Primulas* have something to do. The way by which much of the evil is avoided is briefly as follows. The seeds are not sown until July, and the plants therefore do not flower until February and March. This is late for *Primulas*, for in the country some gardeners so cultivate their plants that they will commence to bloom in December.

If the same thing were done in London, the plants would bloom much less perfectly, and the essential purpose for which Messrs. Carter's plants are grown would be impossible of attainment. In the months of January and early part of February, dark, sunless days are so frequent, that if flowers open, it becomes impossible to get them fertilised. Conditions are so stagnant that the pollen remains inactive, and the operative cannot effectively pollinise the stigmas, even with the aid of a brush, and therefore little seed is obtained.

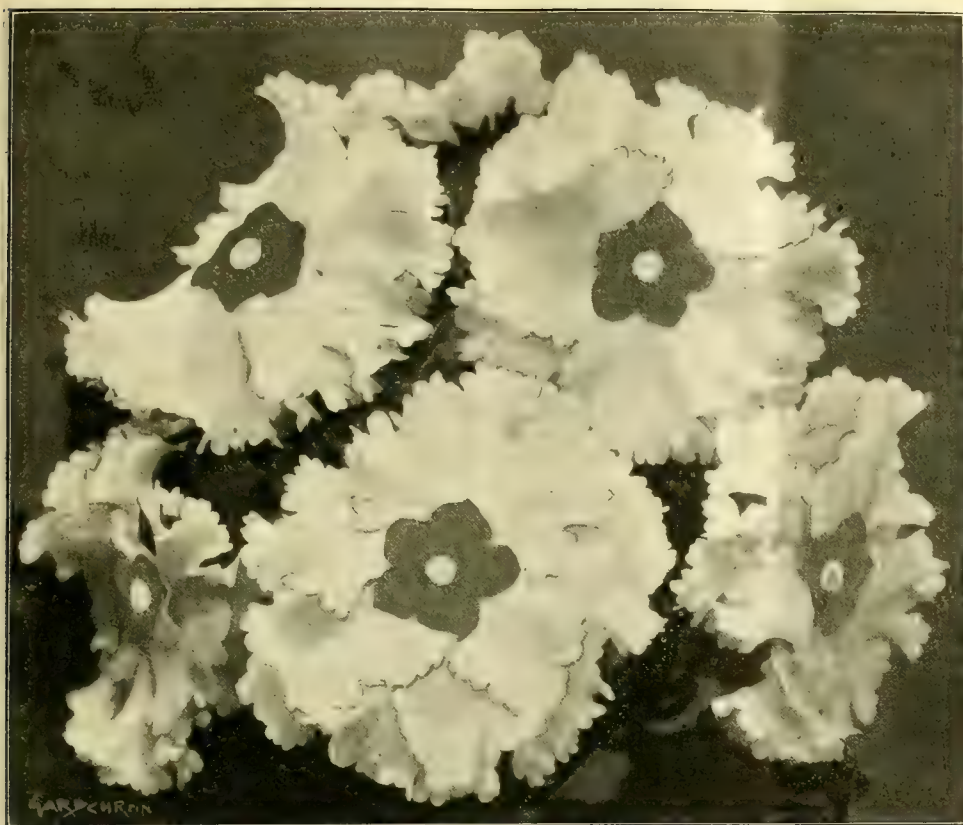


FIG. 57.—NEW PRIMULA, "KING EDWARD": COLOUR WHITE, WITH YELLOW EYE.

But after the middle of February there is usually better weather, even in London, and when we were at Forest Hill, this week, some of the earliest flowers had not only been fertilised, but the seeds were growing perceptibly.

Some of the most interesting of the varieties at Forest Hill are novelties that have resulted from crosses between "Bouquet," a variety with a foliaceous calyx, larger than the flower, which it surrounds, and several of the best varieties

of the normal type. The best of the single-flowered varieties that have "Bouquet" parentage has been named King Edward, and is depicted at fig. 57, from a photograph taken by Mr. Bard, who has the management of this nursery. The flowers are white, with a yellow eye, and have seven beautifully fringed petals, whilst the form of the flower is perfect, and the calyx, though slightly foliaceous, is less in size than the blooms. The foliage is not quite the type known as "Fern-leaved," nor is it plain, but may be likened somewhat to Parsley. The petioles are rather long, and the leaves and habit consequently a trifle "straggly," but with the selection and fixing that the variety will need, it should eventually become a very valuable one. When "Bouquet" was crossed with one known as Carmine, it produced plants with curiously spotted flowers. In colour they are light carmine, but in each point between the teeth of the notches, along the margins of petals, there is a very minute white spot. Elaine Improved is a form of a well known white variety, after being crossed with Bouquet, and the seedlings recrossed with Elaine. This was done to get larger flowers and greater substance into Elaine, and this result has been obtained.

There is great variety among the types already catalogued, and as these are described in the lists, we need not speak of them at length here. Some of the best we noticed were the following, and in most cases their names disclose the colours of the flowers. Elaine, Elaine Improved, and Holborn Queen (all white except the one last-named, which acquires a tint), Vermilion, Carmine, Ruby, Scarlet, Salmon, Holborn Blue, Hercules (mauve), Princess May (very fine pink variety), Rose Queen, and Imogene (pink).

The semi-doubled-flowered varieties are very free, and of much use for cutting. The colours of most of them are very good. One of the newest and best of these has been photographed by Mr. Bard, and will be seen at fig. 58. It has been named Queen Alexandra, but will not be available for distribution for a long time. We noticed Prince of Wales (rose), Snowflake (white, excepting a blush), Scarlet (excellent), Lilac, Vivid, and several new ones.

There will be a great display of Cinerarias in the course of a few weeks.

HOME CORRESPONDENCE.

CRINUM POWELLI.—As the writer of the article on hybrid Amaryllideæ, I wish to thank Mr. Powell for having made public the history of this plant. In my article I had not the advantage of this knowledge; so, having collected all the information I could find in various works, and not feeling satisfied that any of it was really indisputable, I began my remarks thus:—"C. Powell was apparently raised, &c." Hence, I rather object to the remark that I had "fallen into error" in my description of its origin, after having taken this step to show that I did not possess facts on which to make a definite statement. *A. Worsley, Isleworth.*

BROCCOLI AND CAULIFLOWER.—Your correspondent, "W. S.," may be assured of the correctness of my statements in a recent issue of the *Gardeners' Chronicle*, that we have been cutting these vegetables daily for the past five years, with the exception of a fortnight during last February. "W. S." says, I am fortunate if, as I say, I have done so. I fail to see in what I am fortunate. My definition of the fortunate one is, one who has obtained something by results which he had never striven to gain. In the case in point, having regard to the exposed condition of the kitchen garden here, I was compelled to ascertain by repeated trials the varieties of Broccoli and Cauliflowers which would endure the exposed position, and were suitable to the locality. In order to enable me to reach these results, I have some seasons grown as many as fifteen varieties of Broccoli alone; many of these I have had to discard as unsuitable. At the same time, and after considerable trouble, I have also been enabled to select varieties which are suitable, and it is these that I grow.



FIG. 58.—NEW PRIMULA, "QUEEN ALEXANDRA": COLOUR PURE WHITE.

In this I am simply reaping my reward for the trouble that I took in making successive experiments. "W. S." remarks that the early winter Broccoli must have been exposed to severe frosts; but, as a matter of fact, they were not so exposed, for during the past six years, in this district, at all events, we have had no very severe frosts of long duration in early winter, but these have come in the latter parts of the winter, and in early spring. I can assure your correspondent that had it not been for severe frosts setting in while the land was in a saturated state from heavy rains, I should not have to chronicle the fortnight's break in the supply during last February. *H. Walters, Eastwell Park Gardens, Ashford, Kent.*

— Your correspondent, "W. S., Wiltshire," must have been singularly favoured as regards the weather, if he has cut Snow's Winter White fit for table this month. Unfortunately in this garden, out of a break of between 200 and 300 plants, we have had to remove to the rubbish-heap 90 per cent., which were destroyed by the frosts of the first few days of January, when we registered between 15° to 27°. It is customary here to plant out-going Strawberry plantations with Broccoli, and to use the crowbar in planting them. The late severe weather, coming after the mild and wet spell in November and December, seems to have dealt severely with all the Brassica family, as well as with exotic shrubs, viz., *Berberis dulcis*, *B. Darwini* and *Jamesoni*, *Laurustinus*, *Viburnum*, *Laurus nobilis*, *Sweet Bay*, *Bambusa mitis*, *B. Fortunei*, and *Aucubas*; in fact, many of our hardy shrubs have suffered more or less. *William H. Perkins, The Gardens, Milton Abbey, Blandford, Dorset.*

THE OLD EXHIBITION GIANTS.—Illness has prevented me from answering R. Dean's letter in your paper concerning the old exhibitors at Chiswick and Regent's Park shows upwards of fifty years ago. The Mays were not the first on the list in point of time. John Green, gardener to Sir Edward Antrobus, at Cheam, with his *Azaleas*, stove and greenhouse plants, and *Cacti*; W. Barnes, of Normans, Bromley Common; Hunt and T. Williamson, gardeners to Miss Trail, of Hayes Common; Cole, at Colyers, Dartford, Kent, preceded the Mays of Fraser's and Mrs. Lawrence fame, and who became then the strongest competitor of Cole. Then there were May of Good-hirst, Langley Park; and William Taylor, of Streatham Common, who died at Shrubland Park; B. Peed, of Tredwell's, Norwood; Sam Smith, of Quilter's of Norwood; and George Dodd, of Cathcart's; and then appeared Thomas Baines, from Manchester; W. May again, from Rugely; and W. Speed, from Edmonton. Among the trade exhibitors were the Messrs. Fraser, of Lee Bridge, where the Mays were cradled in plant-growing. Rollissons, of Tooting, with their grand Heaths and Orchids. What has become of those rare tricolor *Ericas* they raised so successfully? Then I may mention the Jacksons, of Kingston, Surrey, with Puddick as their cultivator; Veitchs, of Exeter and Chelsea; C. Turner, of Slough, with the mighty Rose-bushes in pots; and Pauls, of Chess-hunt and Waltham, with plants like hayricks; the like will never be seen again. Then W. Cutbush, of Highgate, with *Ericas*. Those glorious plants will never be seen again, nor those *Pimeleas* from Ealing, the *Aphelexis* from Bromley Common, nor *Leschenaultias* from Hayes Common, Kent; and *Genetylis*, *Tetrathecas*, *Dracophyllums*, *Ericas*, *Epacris*, *Chorozemas*, *Ixoras*, *Allamandas*, *Stephanotis*, and many others. Those were days of floral glory never surpassed. *J. P., Purley, Mitcham Road, Streatham.*

APPLE BARNACK BEAUTY.—In your report of the Fruit Committee of the Royal Horticultural Society, p. 114, I notice you mention some five dishes of Apple Barnack Beauty, exhibited by Messrs. W. & J. Brown, nurserymen, of Stamford. I should like to mention that this Apple does well with us here. I hear the same from other northern growers. It may interest gardeners to be informed that our trees are worked upon the Crab stock. It is what we may term a thrifty grower, that is, it forms fruit-buds whilst young, and its growth generally is more of a reproductive than a vegetative character. I have seen good crops of fruit on quite young trees at the nurseries of Messrs. Backhouse of York. It forms a natural pyramid, and in this respect it is similar to the old Cockle Pippin. The latter is a very good late dessert Apple with

us. Canon Argles of York, who is an ardent amateur horticulturist, told me that Barnack Beauty was raised by a workman on his father's estate at a village called Barnack in Northamptonshire. I believe the late Mr. R. Gilbert, gardener at Burghley House, was the first gardener to notice the merits of the Apple in question. *H. J. C., Grimston, Tadcaster.*

ROYAL GARDENERS' ORPHAN FUND.—In your issue for February 12, 1887, p. 219, you gave me space to suggest that a Gardeners' Orphan Fund or society might then fitly be established. The object was to celebrate the fiftieth year of the reign of the late Queen Victoria. By to-night's post I have received an abridged account of the thirteenth annual meeting. The most sanguine of its founders must be gratified with the success so far. I notice that over £1000 has been paid to orphans in 1900. However, it is not backward that I want those who read this note to look, but in the opposite direction. Have gardeners, as a body, done what they might and could in the matter? I notice that out of the income of the past year, subscriptions amounted to only about £363. It is fair to say that little if any more than half of this sum is from *bona fide* gardeners. You once before gave me permission to say that as I knew, both from experience and observation, many gardeners with families have a hard struggle to make things meet and tie; all the same, I also know that thousands could, if they wished, spare a trifle over a penny a week and become subscribers to the Gardeners' Orphan Fund. Few of my brother horticulturists, of either low or high degree, have a keener love of the pleasures of good fellowship and social intercourse than myself; all the same, I would undertake to say that at, say, a dozen big shows held annually fully as much is expended on extravagances (I do my share) as is contributed to the Orphan Fund in the same period of time. Let us all do what we can to induce not fewer than 500 new gardener subscribers this year. *H. J. C., February 18, 1901.*

GALANTHUS ELWESII VAR. WHITTALLI.—This beautiful Snowdrop has been mentioned on several occasions since its introduction in 1898, but no drawing of it has, I think, hitherto been published. The two plants shown in my sketch are from a small clump in my garden, and have not attained their full height yet, being somewhat late in flowering, owing to the recent cold weather. The leaves are very massive and glaucous, and the plants have done well with me, showing a stronger growth this year than last, and a tendency to increase by offsets. This Snowdrop is a native of Asia Minor, and for its introduction we have to thank Mr. Whittall of Smyrna. It has been sent out by some nurserymen under the name of *G. erythræ*. *W. E. Ledger, Wimbledon.* [On comparing the excellent drawing sent with the figure of *G. Elwesii*, given in our columns, March, 1890, we do not see sufficient difference to make it worth the cost of illustrating. When the two forms were lately shown together at the Royal Horticultural Society, a similar opinion as to their close resemblance was pronounced. The leaves of Whittall's variety are broader, and less pointed. *ED.*]

CATTLE AND YEW-TREES.—On Jan. 29, 1901, two valuable horses belonging to T. T. Birkin, Esq., Ruddington Grange, died through having eaten some Irish Yew. The animals appeared to have been sheltering by the side of the shrubbery from the force of the very heavy snowstorm during the night and early morning, and had reached over the low iron fence and browsed upon the Yew-tree within reach. There was no mistake about the cause of death, as their stomachs were examined by an eminent veterinary surgeon. I have also positive testimony of a calf having died through eating some green clippings of English Yew from a hedge which partly surrounds my own dwelling. I think the above remarks go a long way towards proving that Yew in a green state is as dangerous as when partly dried, and that there is little, if any, difference in the effect of the two varieties when eaten by cattle. *J. Dixon, Ruddington, Notts.*

— A case of loss of cattle from browsing on the Yew has just occurred here. There is in the park a herd of between 200 and 300 highland steers, and a week ago three of these animals were found dead. The local veterinary surgeon's examination, and that made by an expert from the Royal Veterinary College, London, showed

that the cause of death was from eating of the foliage of the Yew. A search was made in the park, and a Yew-tree found which had recently been blown down, of which the cattle had eaten, with the result mentioned. This proves that the Yew in a fresh, green state is poisonous as well as in a half-dried condition. *H. Walters, Eastwell Park Gardens, Ashford.*

LATE PEARS AT LIFTON, DEVON.—Having read with interest the correspondence on late Pears in the *Gardeners' Chronicle*, I remark there is one good late variety which has not been mentioned, viz., *Beurré Rance*. It is a Pear that, in my opinion, is one of the best and latest, keeping well into March. I am aware that in some places it is only fit for stewing, but here in most seasons, when well ripened and left on the trees till a late date, it is very juicy and of good flavour. We have it growing on south and east walls, doing well on both aspects. Other late Pears are *Ne Plus Meuris* and *Olivier de Serres*, both of which are good keepers, and of very good flavour, although not of large size. *Winter Nelis* will not keep here after the end of November, although it is one of the best flavoured Pears in its season. *Easter Beurré* and *Josephine de Malines* are ripe about the beginning of January; the last named being one of the best flavoured Pears we have, and much sought after. *Glout Morceau* also does well, and in most seasons is very good, coming into use in January. All of these varieties are grown on walls, as we have but few Pears in the open, and these as a rule are not satisfactory. *F. Q. C., Lifton Park Gardens, Devon.*

APPLES SCARLET NONPAREIL, STURMER PIPPIN, AND BLENHEIM ORANGE.—The two kinds first mentioned are excellent for dessert purposes; both are good croppers here in our light though deep soil. *Scarlet Nonpareil* is in season from January until April, and succeeds as a bush or espalier. The fruit acquires a beautiful colour on the side next the sun, and in shape it is not unlike a medium-sized fruit of *Blenheim Pippin*, or "Blossoming Orange" as it is sometimes called in this locality. I consider *Scarlet Nonpareil* the best flavoured Apple we have for present use. *Sturmer Pippin* keeps well into May, and is good in flavour; it bears enormous crops here upon bush trees, and requires to be freely thinned in most seasons. I enclose fruits of each, and of *Blenheim Orange*, which I think you will find of good flavour. It is much appreciated here as a dessert fruit, and often keeps good up to the end of April. I have some good fruits of *Newton Wonder*, a variety of which much has been written lately, and will send a few later. This is a grand culinary Apple for late use. *J. Mayne, Bickton, Devon.* [Our correspondent's fruits are excellent, and well-preserved examples of the Apples mentioned in his note. They say much for the suitability of the Devonshire climate for Apple cultivation, and for our correspondent's skill as a cultivator. *ED.*]

CULTURAL MEMORANDA.

BROWALLIA SPECIOSA MAJOR.

THIS beautiful blue and white-flowered greenhouse plant, almost perpetual in flowering, and whose habit is neat, may be propagated easily from seed or cuttings, the latter having its advantages when once a good form has been secured. Seed may be sown in the spring, and the plants pricked off, and grown on during the summer in a cool place, or out-of-doors. The tops may be taken off and propagated, if thought desirable, and these will form a succession. When wanted in bloom, the plants should be placed in a warm house or pit, and finally in a warm greenhouse. About once a fortnight some mild liquid-manure may be afforded them, soot-water and *Standen's* being suitable if applied alternately. The plants may be cut down if cuttings are wanted. *W. A. Cook.*

HYBRID AQUILEGIAS.

The seed should be sown in shallow pans, this month or in March, in a mild heat. The plants will flower this year if accorded genial conditions. If the soil the pans are filled with is moderately moist, no water will be needed before the seed germinates. The seed, being fine, requires to be sown

thinly and evenly, and to be pressed into the soil and covered with a sheet of glass, and over all a bit of paper. Prick off the plants when large enough into warmed soil, and afterwards transplant them to shallow boxes filled with soil; gradually harden, and plant out either in nurse beds or the flower borders.

GAURA LINDHEIMERI

This slender-growing plant introduced from Texas half a century ago, is effective in masses or in groups in the mixed flower border. To have good plants for flowering the first year, the seeds should be sown at about this date, or in the warmer parts of England, a little later. Let clean, well-drained seed pans, filled with a light sandy compost, be employed. Sow evenly and thinly, and cover them but slightly with soil; stand the pans in gentle warmth. The soil should consist of new loam and leaf-mould, in equal proportions,



FIG. 59.—A FLORAL DESIGN AT THE QUEEN'S FUNERAL, SENT BY "THE PRINCE OF WALES' OWN."

mixed with potting-bench refuse, the whole being passed through an $\frac{1}{2}$ -inch sieve, and the drainage good. Transplant early, and when large enough, and sufficiently hardened-off, plant in masses.

ANEMONE HORTENSIS, AND OTHERS.

Seeds may now be sown in pans, boxes, or frames, and, at a later date, on a warm border. The plants are hardy, and should not be coddled. Rub the seeds together with silver-sand to separate them, and sow thinly, barely covering them with mould, and place the pans, &c., in a cold frame. The flowers afforded are useful material for many purposes, and the plants may be grown in pots, and gently forced into bloom. *H. Markham, Wrotham Park, Middlesex.*

FLOWERS AT THE QUEEN'S FUNERAL.

MESSRS. STANDISH & Co., Court Florists, of Knightsbridge, have kindly lent us photographs of various designs of flowers supplied by them in connection with the funeral of her late Majesty Queen Victoria. That reproduced at fig. 59 represents

the Prince of Wales' feathers, formed of Lilies of the Valley, springing from a crown of Parma Violets. The lettering of the motto was done with dark-coloured Violets, jewelled with Orchids, and over a base of double zonal Pelargoniums. The design was made for "The Prince of Wales's Own," the 10th Royal Hussars.

COLONIAL NOTES.

WEST INDIES.

AN extra number of the *West Indian Bulletin*, the journal of the Imperial Department of Agriculture, has been issued, containing a full report of the proceedings of the third West Indian Conference held at Barbados in 1901, as already alluded to in our columns. Adverting to the necessity for extended education, Dr. Morris, the

the entomologist, pathologist, instructors in the culture of fruit, Vines, Tobacco, Coffee. The Curator of the Botanic Gardens, Mr. Mahon, states that there is a great demand for practical gardeners.

SOCIETIES.

ROYAL HORTICULTURAL.

FEBRUARY 26.—A meeting of the various Committees of this Society was held in the Drill Hall, Buckingham Gate, Westminster, on Tuesday last. A greater display was made than on any previous occasion since November, and there was a good attendance of Fellows and visitors. There were, however, few good novelties in proportion to the display, and greater number of these were to be found amongst the Orchids, which were shown in considerable numbers.

THE ORCHID COMMITTEE recommended the awards of two First-class Certificates, one Botanical Certificate, and four Awards of Merit.

THE FLORAL COMMITTEE recommended Awards of Merit to a new Iris, *I. Tubergeniana*, shown by Miss WILLMOTT; and to *Adonis amurensis*, shown by Messrs. WALLACE & Co., Colchester.

THE FRUIT AND VEGETABLE COMMITTEE recommended Awards of Merit to a large kitchen Apple Diamond Jubilee, shown by Mr. A. J. THOMAS, fruit grower, near Sittingbourne; and to Apple Scarlet Nonpareil, fruits of which were shown by Lord BEAUCHAMP.

Among the groups of plants exhibited, special mention may be made of the Azaleas, and other flowering plants from Messrs. R. & G. CUTBERT, Southgate; and Messrs. B. S. WILLIAMS & SON, Hol'oway; forced Narcissus and Daffodils from Messrs. W. CUTBUSH & SONS, Highgate, which was one of the most exhaustive exhibits of the kind we have remarked for a very long time, and showed excellent cultivation; stellate Cinerarias from Messrs. H. CANNELL & SONS, and Messrs. JAS. VEITCH & SONS; Camellias from Messrs. W. PAUL & SON, Waltham Cross; and collections of hardy plants from Messrs. WARE of Feltham, WALLACE of Colchester, JACKMAN of Woking, and BARR of King Street, Covent Garden, W.C.

The Rev. Prof. HENSLAW delivered a LECTURE in the afternoon upon "The Making and Unmaking of a Flower," and described, in his usual interesting fashion, the gradations from the simple or naked flower, to the perfect one in which all the parts are represented.

Before the lecture commenced, there were elected to the privileges of the Society fifty-six new Fellows, making a total of about 170 elections since the new year.

Floral Committee.

Present: W. Marshall, Esq., in the Chair; and Messrs. O. Thomas, H. B. May, R. Dean, G. Reuthe, J. Hudson, J. F. McLeod, C. R. Fielder, O. Dixon, C. E. Pearson, R. C. Notcutt, J. W. Barr, C. E. Shea, E. H. Jenkins, H. J. Cutbush, H. Turner, G. Paul, W. Howe, J. Jennings, C. T. Drury, H. J. Jones, C. Blick, and E. T. Cook.

Camellias were grandly shown by Messrs. W. PAUL & SON, Waltham Cross Nurseries, Herts, who made such an exhibit of plants and flowers as they have done each season for years past. Some of the bushes were 6 feet or more high, and almost as much through. They varied from this size to others in 5-inch pots, and even these bore several blossoms each. There is, doubtless, less trade done in Camellias than formerly, but such a group of plants as Messrs. Paul exhibited, in perfect health, with glossy, deep green, healthy foliage, and abundant flowers, may well serve to prevent them suffering further neglect. A very large number of varieties were displayed, both single and double (Silver Gilt Flora Medal).

MESSRS. JNO. LAING & SONS, Forest Hill Nurseries, London, S.E., exhibited a group of miscellaneous stove and greenhouse plants, some of them ornamental foliage plants, others in flower. We noticed Cyclamens, *Azalea indica*, the yellow-spashed *Calla Richardia Pentlandii*, *Ericas*, *Cordylines*, *Acacia Drummondii*, *Codiaeums*, &c. (Bronze Banksian Medal).

Cineraria stellata was shown by Messrs. H. CANNELL & SONS, Swanley, Kent. A group of twelve plants of bushy habit represented considerable variation in the colour of the flowers, no two being perfectly similar.

Cyclamens were also shown well by Messrs. H. CANNELL & SONS, who had very freely flowered plants in 5-inch and 6-inch pots, in considerable variety of colour, and some pure white. The strain was a very praiseworthy one, and the cultivation excellent (Silver Banksian Medal).

MESSRS. JAS. VEITCH & SONS, Royal Exotic Nurseries, Chelsea, exhibited a small group of plants of *Cineraria polyantha*. They were from a cross between one of the garden varieties of *Cineraria* and *C. Tussilaginifolia*. All the plants from the cross bore flowers of a shade of mauve or light purple, and it is thought probable that the variety will reproduce itself

Commissioner for Agriculture says:—"We start with the fundamental idea that those who have to depend on the cultivation of the soil as the sole means of existence should at least be taught to observe and study intelligently the every-day facts of rural life, and to clearly comprehend the cardinal principles underlying the most important agricultural operations." Dr. Morris says there is a reasonable hope that the colonists may be able to increase the amount of sugar in the canes to the extent of 40 to 50 per cent. A cane known as B. 147 has yielded 44 per cent. more marketable sugar than any other.

QUEENSLAND.

The annual report of the Department of Agriculture for 1899-1900 mentions the death of Mr. W. H. Gorrie, the horticulturist who had been connected with the Agricultural College from the commencement, and was highly respected. A Ginger, native of Cape York, has been cultivated in the Brisbane Botanic Garden, and will prove of considerable value. Two parts of the *Queensland Flora* have been issued by Mr. F. Manson Bailey, the colonial botanist. Reports on the work done by

from seeds. It was of a very free branching habit, and was an excellent example of a useful type of decorative Cineraria. Another group of plants was shown as Cineraria polyantha compacta. The plants showed very considerable variation in the colour of the flowers, which were small in size, but the habit would be more pleasing if less "compact."

Lachenalia "Brightness" is a very showy variety of this pretty greenhouse bulb, shown by Mr. F. W. MOORE, Glasnevin Botanic Gardens, Dublin.

FORCED FLOWERING SHRUBS.

Messrs. R. & G. CUTHBERT, Southgate Nurseries, Middlesex, made an exceedingly pretty exhibit of "mollis" Azaleas, and other forced flowering plants, the group occupying a space of 100 feet. The ground-work was of Azaleas, many of them those known as *mollis* × *sinensis* hybrids; *Staphylea colchica*, and a few fine foliage plants. There were also standards 5 feet or more high, with heads of bloom over the display made by the dwarfier plants. Amongst the standards were *Prunus sinensis* alba fl.-pl., *Prunus triloba*, *Staphylea colchica*, *Ribes atrosanguineum*, *Cytisus purpureus*, *Laburnum vulgare*, and the following varieties of Lilac: Charles X. (single), pale mauve colour; Marie Legraye, very fine, single, white; and Alba virginialis, small, single, white. Two plants of *Wistaria sinensis* were abundantly flowered, very fragrant, and were not a trifle the worse for having been hurried into bloom (Silver-gilt Flora Medal).

Messrs. B. S. WILLIAMS & SON, Victoria and Paradise Nurseries, Upper Holloway, London, N., exhibited a group of forced flowering plants, in which standard Lilacs were a prominent feature. We noticed, in addition to them, excellently flowered plants of *Spiraea Medea* (confusa), *Malus floribunda* Schiefferdeckeri, *Staphylea colchica*, *Azalea mollis*, &c. It was a pretty group, the greater part of the flowers being white or pale in tint (Silver Flora Medal).

HARDY AND BULBOUS PLANTS.

Messrs. W. CUTHBERT and SON, Highgate Nurseries, London, furnished thickly with Narcissus, one-half of one of the long tables that ran lengthways the hall. There were twelve varieties of the Polyanthus section, among which the varieties Her Majesty, Gloriosa, Grand Monarque, White Pearl, Bazelman Major, and Laura showed to excellent advantage. There being eight pots of each variety, their characteristics were well displayed. The rest of the sections of Narcissus were equally well represented, and amongst others we noticed *N. poeticus* ornatus, Barri Maurice Vilmorin, Leedsii Queen of England, Dutch Moschatus, Campanel, odoratus rugulosus; also bicolor varieties, including Horsfieldi, Empress, Victoria, &c., the last-named variety being much the best of the bicolors for purposes of forcing; Emperor and others of the yellow Trumpet section, and many of the Incomparabilis type (Silver-gilt Banksian Medal).

Messrs. GEO. JACKMAN & SON, Woking, exhibited hardy flowering plants in pots, and a quantity of forced Narcissus, *Fritillaria aurea*, *Morisia hypogæa*, *Muscari botryoides* alba, *Puschkinia libanotica*, *Hyacinthus azureus*, *Galanthus Elwesii*, hardy Cyclamens, *Hepatica triloba* alba, the purple-flowered *Saxifraga Rudolphi*, *Primula frondosa*, &c. (Bronze Banksian Medal).

Mr. T. S. WARE, Ltd., Hale Farm Nurseries, Feltham, made a large exhibit of hardy flowering plants (chiefly alpine) in pots. We noticed *Cyclamen Atkinsii* roseum, a richly-coloured little flower; the blue-flowered *Lithospermum prostratum*, *Saxifraga Burseriana*, *Megasea crassifolia*, *Scilla sibirica* alba, *S. bifolia*, *Primula acaulis sanguinea plena*; several early Crocuses, including C. Susiana, C. nubigenus (almost white), C. sulphureus striata, C. Imperati, *Hepatica triloba* corulea, *Hyacinthus azureus*, the new pale-coloured variety of *Primula floribunda* known as Isabella, P. verticillata, *Iris reticulata*, I. histrio, the very fine I. Heldreichii, *Galanthus Elwesii* robustus; *Primula obconica* showed considerable variation in the degree of colour in the flowers (Silver Banksian Medal).

Iris germanica, forced into bloom, was shown by Mrs. THORNECROFT, Chiswick Mall, Chiswick (gr., F. Mears). The same exhibitor had a group of forced *Iris* in flower at a meeting in March last year, but three weeks later than the present date. Gardeners should note that this *Iris* well repays for gentle forcing, succeeding admirably, and yielding a display of colour very uncommon at this season.

Seeding varieties of *Crocus chrysanthus* were shown by E. AUGUSTUS BOWLES, Esq., Myddleton House, Enfield; they represented a surprising degree of variation in colour.

Violet Lady William Wynn, a very large double, light-coloured variety, was shown by Dowager Lady WILLIAMS WYNN, Llangedwyn Hall, Oswestry (gr., Mr. G. Squibbs).

Some nice flowers of *Helleborus* in variety were shown by T. H. ARCHER HIND, Esq., Coombe House, Newton Abbot.

Messrs. WALLACE & CO., Kilnfield Gardens, Colchester, had some very interesting little hardy plants in flower. There were the giant Snowdrops, *Galanthus Elwesii*, G. Whittallii, G. Ikarie, and G. plicatus; *Iris reticulata* var. major, a very

fine form; *Muscari præcox*, *Colchicum libanoticum*, *Iris* Bakeriana, Danfordiae, reticulata, and Krelagei.

Some garden hose was shown by the B. F. GOODRICH CO., Akron, Ohio, U.S.A., and 7, Snow Hill, London, E.C. It was recommended as cheap in price, and not liable to kink.

Awards of Merit.

Adonis amurensis.—Similar in most respects to the common species, but grows more vigorously, and the foliage is very finely cut, and rather flatter on upper surface. Flowers are rich orange-yellow colour. From Messrs. WALLACE & CO., Colchester.

Iris Tubergeniana.—This is a very beautiful *Iris*, about 4 ins. high. The leaves are flat, thick, glaucous green, sharply pointed, with very narrow margin of white. The flowers are greenish-yellow in colour, with dark markings along the centre of the falls. Shown by Miss Willmott, V.M.H., Warley Place, Great Warley.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the Chair; and Messrs. Jas. O'Brien (Hon. Sec.), de B. Crawshaw, H. M. Pollett, H. Billantine, H. Little, F. Sander, H. J. Chapman, H. A. Tracy, W. H. Young, H. T. Pitt, W. Thompson, J. W. Odell, Frank A. Rehder, Jeremiah Colman, J. Douglas, E. Hill, F. J. Thorne, and T. W. Bond.

The milder weather contributed to a very fine display of Orchids; the Dendrobiums as usual at this season, being largely represented.

Sir TREVOR LAWRENCE, Bart. (gr., Mr. W. H. White), was awarded a Silver-gilt Flora Medal for a fine group composed principally of the Burford hybrid Dendrobies, among which were two fine forms of *Dendrobium* × *Juno*, with grand flowers; D. × *xanthocentrum*, with dark orange base to the lip, and rose-tipped segments; D. × *Luna*, a nearly white hybrid; D. × *melanodiscus*, D. × *Dido*, D. × *pallens*, D. × *The Pearl*, &c. Other remarkable plants were *Dendrobium nobile* Burford variety, with labellod lateral sepals; *Phalaenopsis* × *leucorrhoda*, P. Stuartiana punctatissima, P. S. aurea, *Cypripedium* × *hirsuto-Sallieri* roseum, the singular *Bulbophyllum Dayanum*, *Odontoglossum* × *excellens*, O. × *Adrianæ* Arddarroch variety, with large, broad-petalled, cream-white flowers, with numerous brown blotches, &c.

Messrs. JAS. VEITCH & SONS, Chelsea, secured a Silver-gilt Flora Medal for a large and very interesting group composed mainly of hybrids. Among the Dendrobiums were D. × *Wiganie* varieties, D. × *splendissimum* grandiflorum, D. × *enosmum* virginale, D. × *Schneiderianum*, D. × *Socius*, D. × *Ainsworthi* intertextum, and other hybrids. The *Cypripediums* embraced C. × *Capt. Holford*, C. × *Titus* superba, varieties of C. × *Hera*, C. × *Germinyanum*, C. × *Winnianum* and many of the *Selenipedium* section, two being new, viz., S. × *comicea* (caudatum Wallisii ♂, leucorrhodum ♀), a fine cream-white flower, tinged with rose, and with long, drooping light rose petals; and S. × *suave* (Klotzschianum ♂, Sedeni candidulum ♀). Among others, also, were *Lælio-Cattleya* × *Dominiana* Langleyensis, L.-C. × *callistoglossa* varieties, L.-C. × *Myra*, L.-C. × *Pallas*, L.-C. × *Coronis*, *Lælia* × *Mrs. M. Gratrix*, *Cattleya* × *Empress Frederick*, a very interesting set of *Epidendrum* × *Clarissa* varieties, the brilliant scarlet form of E. × *O'Brienianum*, *Phalaenopsis* × *Hebe*, P. × *Mrs. J. H. Veitch*, P. rosea leucaspis, *Sophrone-Lælia* × *lata*, and *Phaius* × *amabilis*.

The Right Hon. Lord ALDENHAM (gr., Mr. Beckett) showed a group composed of eight magnificent, large specimens of *Cologyne cristata*, including the Chatsworth and Lemoniana varieties, covered with fine flower spikes, and which showed to great advantage, set up with many good plants of *Thysanacanthus rutilans* well furnished with drooping sprays of scarlet flowers (Silver Flora Medal).

JEREMIAH COLMAN, Esq., Gatton Park (gr., Mr. W. P. Bond), received a Silver Flora Medal for an effective group in which were *Dendrobium nobile* Cooksoni, D. n. nobiliss, and other forms of D. nobile; D. × *Cheltenhamense*, a fine D. aureum, *Cymbidium elburneum*, *Epiphrontis* × *Veitchi*, *Zygopetalum Mackayi*, varieties of *Lælia anceps*, and *Lycaste costata*.

J. RUTHERFORD, Esq., M.P., Beardwood, Blackburn (gr., Mr. Lupton), was awarded a Silver Flora Medal for a pretty group of *Odontoglossum crispum*, including the fine purple-spotted O. c. decorum and O. c. The Temple; also *Lælio-Cattleya* × *Admiral Dewey*, excellently grown; *Cattleya Trianae* eximia, C. T. Rutherfordiana, a splendidly-formed variety with pale rose sepals and petals, and large, richly coloured lip, almost wholly of a glowing claret-purple colour. Other varieties of *Cattleya Trianae* of fine form, and the scarlet *Cochlidia Noetzeliana* were also included.

Mr. JAS. CYPHER, Cheltenham, showed a finely-grown group of Dendrobiums including D. nobile nobiliss, and other forms of D. nobile; the handsome D. × *Virgil*, D. × *splendissimum* Thompson's variety, and a pretty yellow-tinted D. splendissimum, D. × *Burberryanum*, D. × *Ken*

neth variety, D. atro-vioaceum, D. barbatulum, and others (Silver Flora Medal).

Captain HOLFORD, Westonbirt, Tetbury (gr., Mr. A. Chapman), sent *Cypripedium villosum* Westonbirt variety, a grand large flower of fine substance; a handsome *Cattleya Trianae*, a very fine spike of *Cymbidium Lowianum* Veitch's variety, and the handsome *Odontoglossum* × *Adrianæ* Mrs. Robert Benson (see Awards).

J. T. BENNETT-POE, Esq., Holmwood, Cheshunt (gr., Mr. Downes), showed *Cypripedium* × *Gætano*, a very large flower of the C. × *Pitcherianum* class.

The Hon. WALTER ROTHSCHILD, Tring Park, Tring, sent *Lælio-Cattleya* × *intermedio-flava*, and *Schomburgkia undulata* Tring Park variety, differing from that figured in *Bot. Reg.*, xxxi., t. 53, by its denser head of dark red-brown flowers.

J. S. MOSS, Esq., Wintershill, Bishop's Waltham, showed a very fine variety of *Lælia Jongheana*.

J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr., Mr. J. Davis), showed *Cypripedium* × *Miss Louisa Fowler* (Chamberlainianum × *insigne* Chantini), and the rich scarlet *Cochlidia Noetzeliana* "Glebeland variety."

Mrs. BRIGGS-BURY, Bank House, Accrington (gr., Mr. Wilkinson), sent a spike of a fine form of *Cymbidium grandiflorum* (Hookerianum).

C. L. N. INGRAM, Esq., Godalming (gr., Mr. T. W. Bond), showed *Cattleya* × *Zephyra* (Schroderae × *aurea*), a pretty form, with light rose flowers, showing some features of C. aurea in the lip.

E. DE Q. QUINCY, Esq., Chislehurst (gr., Mr. Lees), sent a hybrid *Cypripedium*.

Mr. J. WEATHERS showed the new form of *Phaius tuberculatus* (Warpuri).

Sir FREDERICK WIGAN, Bart. (gr., Mr. W. H. Young), showed several spikes of *Phaius simulans*, Rolfe.

Messrs. F. SANDER & CO., St. Albans, showed a handsome hybrid *Zygopetalum* with a violet lip, and a fine hybrid *Odontoglossum*, whose flowers of a yellow colour were blotched with red-brown.

Awards.

FIRST-CLASS CERTIFICATES.

Sophrontis grandiflora Rossiteriana, from Sir TREVOR LAWRENCE, Bart. (gr., Mr. W. H. White).—A very fine clear yellow form. The plant was shown before from Burford, January 10, 1899, when it received an Award of Merit. The plant now bore four flowers.

Lælio-Cattleya × *warnhamiensis* (C. Trianae × L. cinnabarina), from C. J. LUCAS, Esq., Warnham Court (gr., Mr. Duncan).—Flowers of a fine copper-orange colour, with rich purple lip. The hybrid was raised at Warnham Court, and received an Award of Merit, March, 1898. Several very fine plants were now shown.

AWARDS OF MERIT.

Dendrobium × *rubens grandiflorum* (nobile nobiliss × *splendissimum grandiflorum*), from Sir TREVOR LAWRENCE, Bart., Burford (gr., Mr. W. H. White).—The largest and richest in colour of any of its class, the flowers retaining much of D. nobile nobiliss.

Phaio-Calanthe × *Schroderiana* (P. Wallichii × C. × *Baron Schroder*), from Messrs. JAS. VEITCH & SONS.—A fine hybrid with pale lilac sepals and petals, and finely-expanded claret-coloured lip.

Odontoglossum × *Adrianæ* Mrs. Robert Benson, from Captain HOLFORD, Westonbirt, Tetbury (gr., Mr. A. Chapman).—Flowers large and broad, cream-white, edged with yellow, and thickly spotted with light brown.

Odontoglossum × *Coradinei* Mrs. De B. Crawshaw, from J. S. MOSS, Esq., Wintershill, Bishop's Waltham.—A handsome form, much larger and broader in the segments than many of its class. Yellow, handsomely blotched with brown.

BOTANICAL CERTIFICATE.

Calogyne sulphurea, from F. W. MOORE, Esq., Glasnevin, Dublin.—A curious looking species, with tawny-yellow flowers.

CULTURAL COMMENDATION.

To Mr. E. Hill, gr. to the Right Hon. Lord ROTHSCHILD, for a five-branched spike of *Phalaenopsis Aphrodite* bearing twenty-four very large flowers.

To Mr. Beckett, gr. to the Right Hon. Lord ALDENHAM, for splendidly grown and flowered *Cologyne cristata*.

Fruit and Vegetable Committee.

Present: George Bunyard, Esq., in the Chair; and Messrs. H. Balderson, G. T. Miles, G. Kelf, J. W. Bates, S. Mortimer, A. Dean, J. Wright, W. Fyfe, E. Beckett, C. Herrin, J. H. Veitch, W. Poupart, H. Somers Rivers, G. Norman, J. Willard, A. Ward, G. Wythes, J. Smith, E. S. Blaker, and W. Wilks.

The Earl of BEAUCHAMP, Madresfield Court Gardens, Malvern (gr., Mr. W. Crump), sent specimens of the following varieties of Apples: Rymer Pippin, Margil, Scarlet Nonpareil, Sturmer Pippin, Balchin's Pearmain, Chattey's Kernel, and

one known as Wareham Russet. There were also fruits exhibited of Pear Doyenné d'Alençon (Vote of Thanks).

Fruits of Apple Lewis' Incomparable were exhibited by W. BRYANT, Esq., Stoke Park, Slough (gr., Mr. D. Kemp).

C. P. SEROCOLD, Esq., Maidenhead, showed a collection of fruit including fifteen dishes of Apples, and some fruits of Catillac Pear (Silver Banksian Medal).

A basket of excellent Mushrooms was shown by Lord FOLEY, Ruxley Lodge, Esher (gr., Mr. J. W. Miller), and a Cultural Commendation was deservedly recommended in respect to them.

Awards of Merit.

Apple Diamond Jubilee.—This is a large kitchen Apple, with partially open eye, set in a large, regular basin. The top of the fruit bears a very close resemblance to Alfriston. The almost square base is singular looking, and the short, fleshy stalk is inserted obliquely. Some of the fruits had a little red colour on one side, but they were mostly green, or greenish-yellow. The variety is described as a good grower and free bearer. Shown by Mr. A. J. THOMAS, fruit grower, Rodmersham, Sittingbourne, Kent.

Apple Scarlet Nonpareil.—This is a well known dessert fruit in season from January until March or April, flavour good, size moderate, and appearance most tempting. It is said to have been raised from seed at Kempton Park, near Sunbury, before the last century was twenty years old. Shown from Madresfield Court Gardens, Malvern (see also note on p. 144).

HORNCASTLE CHRYSANTHEMUM.

FEBRUARY 13.—The annual meeting and dinner in connection with this Society was held at the "Red Lion," Horncastle, on the above date. Mr. GEORGE FOX presided over the meeting, and was unanimously re-elected chairman and treasurer of the Society; Mr. W. S. Clitherow and Mr. W. P. Curley were re-appointed secretaries, and president, Lord Willoughby.

The dinner was attended by a large and representative company, presided over by Mr. W. Taylor Sharpe. Mr. FOX, in replying to the toast of "Success to the Society," said the present number of subscribers was greater than in any one year since the Society commenced. The balance in hand is £181 5s. 4d., as compared with £14 5s. 6d. the previous year; while the subscriptions for last year amounted to £34 16s. 6d., against £30 16s. 6d. in 1899.

CROYDON AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT.

FEBRUARY 19.—A crowded meeting was held in the Society's Rooms at the Sunflower Temperance Hotel, Croydon, on the above date. Ten new members were elected, and several more nominated, and the preliminary business terminating, the chairman, Mr. A. J. Simpson, introduced Mr. Cole, of the firm of Messrs. J. Peed & Son, nurserymen, who gave an interesting lecture on "The Cultivation of the Gloxinia." The interest in the subject was evidenced by the remarks and interesting discussion which followed the lecture, and a unanimous vote of thanks was accorded Mr. Cole. To Messrs. Peed & Son was given a vote of thanks for a table of beautiful plants of *Primula stellata*; and to Mr. J. R. Box the Society's thanks were given for a group of fine *Primula sinensis*. The next meeting will be on March 5, when a paper will be read on "The Formation and Management of Lawns."

BECKENHAM HORTICULTURAL.

MR. EDWIN BECKETT, F.R.H.S., head gardener to H. H. GIBBS, Esq., Aldenham Park, Elstree, a very successful cultivator and exhibitor of vegetables, gave at a recent meeting of the Beckenham Horticultural Society a lecture entitled, "Vegetables for Exhibition." The preparation of the ground was dealt with at some length, and due rotation of crops insisted upon, excepting for the Onion crop, as well as the importance in purchasing seeds to have the best types. Potatoes, Onions, Celery, Carrots, Parsnips, Beet, Leeks, Cauliflowers, Brussels Sprouts, Turnips, Tomatoes, and Pears, were each separately considered from the exhibitor's point of view. At the close of the lecture numerous questions were put to Mr. Beckett in relation to trenching the land, manures the saving of seeds, the greening of Potatoes, &c. M. W.

ENQUIRY.

A CONUNDRUM.—A correspondent living at Heaton Park, near Manchester, whom we will call "C. A.," has put the two following questions to us for elucidation, which we print in the hope that some of our readers will kindly afford us their assistance in coming to a decision, especially on the second question, viz.:—1. A gardener exhibits for a prize of any description, cup, medal, or money; would the prize be the employer's property, or the gardener's? 2. A gardener exhibits for a cup, to become the property of the winner for three successive times, and who wins twice under one employer, and once under another employer, having changed his situation in the meantime. Will the

last win be counted with the two previous wins under his former employer to enable him to secure the cup?

Obituary.

MR. JOHN MITCHINSON.—We regret to announce the death of Mr. J. Mitchinson, who for a period of fifty years was a nurseryman and seed merchant at Truro, Cornwall. In our next issue we shall publish a brief account of his career.

MARKETS.

COVENT GARDEN, FEBRUARY 28.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Asparagus "Fern," bunch ... 1 0-2 0	Maidenhair Fern, per doz. bunches 4 0-8 0
Carnations, per doz. blooms ... 2 0-3 0	Marguerites, p. doz. bunches ... 2 0-4 0
Cattleyas, per dozen ... 9 0-12 0	Mignonette, per doz. bunches ... 4 0-6 0
Eucharis, per dozen ... 2 0-4 0	Odontoglossums, per dozen ... 6 0-9 0
Gardenias, per doz. ... 1 6-2 6	Roses, Tea, white, per dozen ... 1 0-3 0
Lilium Harrisii, per dozen blooms ... 4 0-6 0	— Safrano, per dozen ... 1 0-2 0
Lilium lancifolium album, per dozen blooms ... 1 6-3 0	— Catherine Mermet, per dozen ... 3 0-6 0
Lilium rubrum, doz. ... 3 0-5 0	Smilax, per bunch ... 3 0-5 0
Lilium longiflorum, per dozen ... 4 0-6 0	Tuberose, per doz. blooms ... 0 4-0 6
Lily of Valley, per doz. bunches ... 6 0-12 0	

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, English, per bushel ... 4 0-5 0	Grapes, Almeira, doz. lb. ... 5 0-8 0
cookers, large ... 4 0-5 0	— Belgian, lb. ... 0 6-1 4
various ... 2 0-4 6	Lemons, case ... 9 0-15 0
— Nova Scotia, per barrel ... 12 0-16 0	Lyches, new, pkt. ... 1 0-—
— Californian, per box ... 8 0-10 0	Oranges, Navel ... 13 0-15 0
— Wellingtons ... 4 0-7 0	— Bitter, case ... 6 0-9 6
Bananas, bunch ... 5 0-8 0	— Blood ... 7 0-—
— loose, per doz. ... 1 0-1 6	— Murcia, case ... 7 0-—
Cobnuts, lb. ... 0 5-3	— Tangierine, box ... 0 8-0 10
Cranberries, case ... 16 0-—	— Valencia ... 14 0-16 0
Chestnuts, Italian, per bag ... 16 0-—	Pears, French stewing, crates ... 7 0-—
Grapes, Alicante, per lb. ... 1 4-2 9	— Californian Easter Beurré, half cases ... 15 0-—
— Colmar, A. ... 2 0-2 6	Pines, each ... 2 6-5 0
— Colmar, B. per lb. ... 1 3-1 6	Sapucaias, lb. ... 1 3-—
	Strawberries, per lb. ... 4 0-9 0
	Walnuts, cwt. ... 38 0-—

VEGETABLES.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Artichokes, Globe, per doz. ... 3 0-—	Horseradish, loose, per doz. ... 1 6-—
— Jerusalem, sieve ... 0 9-1 0	Leeks, per dozen bunches ... 1 0-1 6
Asparagus Spruce ... 0 10-—	Lettuces, French Cabbage, doz. ... 1 6-—
— Paris Green, bun. ... 5 0-5 3	Mint, per doz. bunches, new ... 5 0-6 0
— home-grown, per bundle ... 8 0-—	Mushrooms, house, per lb. ... 0 9-0 10
— Spanish, bundle ... 2 0-—	Onions, picklers, per sieve ... 2 0-3 0
Beans, dwf. Madeira, per bkt. ... 2 0-3 0	— per bag ... 3 0-3 6
— Ch. Islds. and home, dwf., new, per lb. ... 1 6-1 9	— cases ... 3 0-—
— French, dwf., packets ... 1 0-—	— English, p.cwt. bag ... 4 6-5 0
Barb de Capucine ... 0 4-—	Parsley, 12 bunches — per sieve ... 1 0-2 0
Beetroots, bushel ... 1 3-1 6	— per bag ... 0 9-1 0
Beet, per dozen ... 0 6-—	Parsnips, cwt. bags ... 2 0-2 6
Broccoli Sprouts, bushel ... 0 9-1 0	Potatoes, per ton ... 85 0-125 0
Brussel Sprouts, per sieve ... 1 0-1 6	— New, per cwt. ... 8 0-14 0
Cabbage, tally ... 2 0-3 0	— New French, lb. ... 0 2-0 3
— dozen ... 0 9-—	— New Frame, Channel Islds., per lb. ... 0 6-0 7
Carrots, 12 bunches — washed, in cwt. bags ... 2 0-2 6	Radishes, per 12 bunches ... 2 3-—
Cauliflowers, per dozen ... 0 9-2 0	Rhubarb, Yorks, per dozen bundles ... 1 1-1 4
— crate ... 4 0-6 0	Salad, small, punnets, per dozen ... 1 3-—
— tally ... 3 6-7 0	Savoy, per doz. ... 0 6-1 0
— Italian, basket ... 3 6-4 0	— per tally ... 2 6-4 0
Celeraie, per dozen ... 2 6-—	Scotch Kale, bush. ... 1 0-—
Celery, doz. bunds. ... 15 0-18 0	Seakale, doz. punnets ... 12 0-—
— unwashed, doz. ... 8 0-12 0	Shallots, new, p. lb. ... 0 2-—
Chicory, per lb. ... 0 2-—	Spinach, French, crates ... 4 0-—
Oress, doz. punnets ... 1 6-—	Salsafy, bunch ... 0 4-—
Cucumbers, doz. ... 3 0-6 0	Tomatoes, Canary deeps ... 2 0-3 0
Endive, new French, per dozen ... 1 9-—	Turnips, per dozen — in bags ... 1 6-2 0
— Batavian, doz. ... 2 6-—	Turnip tops, bush. ... 1 0-—
Garlic, new, lb. ... 0 2-—	Watercress, p. doz. bunches ... 0 6-—
Horseradish, English, bundle ... 1 0-1 6	
— foreign, per bunch ... 0 9-1 0	

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantums, p. doz. ... 5 0-7 0	Ferns, small, per 100 ... 4 0-6 0
Arbor-vitæ, var., doz. ... 6 0-8 0	Ficus elastica, each ... 1 0-7 6
Aspidistras, p. doz. ... 18 0-36 0	Foliage plants, var., each ... 1 0-5 0
— specimen, each ... 6 0-10 6	Lily of Valley, each ... 1 9-3 0
Cannas, per dozen ... 18 0-—	Lycopodiums, per dozen ... 3 0-4 0
Crotons, per doz. ... 18 0-30 0	Marguerites, per dozen ... 8 0-12 0
Cyclamen, per doz. ... 8 0-10 0	Myrtles, per dozen ... 6 0-9 0
Dracenas, var., per dozen ... 12 0-30 0	Palm, various, ca. ... 1 0-15 0
— viridis, per doz. ... 9 0-18 0	— specimens, each ... 1 0-63 0
Ericas, var., per doz. ... 12 0-36 0	Pelargoniums, scarlet, per dozen ... 0 12 0
Econymus, various, per dozen ... 6 0-18 0	— Ivyleaf, per doz. ... 8 0-10 6
Evergreens, var., per dozen ... 4 0-18 0	Spireas, per dozen ... 6 0-12 0
Ferns, in variety, per dozen ... 4 0-16 0	

REMARKS.—Prices all round remain much the same as last week. Cucumbers easier. Cobnuts a little advanced. Cape fruits: Nectarines, per case, 5s. to 7s.; Peaches, 5s. to 8s.; Plums, 2s. to 4s.; Pears Williams' Bon Chrétien, 7s. to 8s. There is a fair supply of New Potatoes from Teneriffe, and samples vary considerably.

POTATOS.

Various sorts, 85s. to 105s. per ton; foreign bags, 50 kilo., 4s. to 5s.; Dunbar Main Crop, 120s. to 125s.; Up-to-Date, 125s.; seed Potatoes in variety, list on application. John Bath, 32 & 34, Wellington Street, Covent Garden.

SEEDS.

LONDON: February 27.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., report a thin attendance on to-day's market with only a small business doing. Meantime there is a fair, seasonable all-round inquiry for Grass and Clover-seeds, whilst no change of importance can be quoted in values. It is noteworthy that America continues to take back, and in considerable quantities, her red Cloverseed from English and continental ports. As regards home-grown Clover-seeds, secondary qualities are hard to sell. Imported Italian is dull, but for Perennials the tendency is upwards. Sanfoin, Timothy, and Lucerne realise former terms. Linseed proves a disappointing market, but full rates are asked for Mustard and Rapeseed. The German Green Lentils being cheap and good, attract increasing attention.

FRUIT AND VEGETABLES.

GLASGOW: February 27.—The following are the averages of the prices recorded since our last report:—Apples, Canadian Kings, 20s. to 22s. per barrel; Baldwins, Spies, Greenings, Russells, &c., 15s. to 21s. do.; Americans, various, 14s. to 20s. do.; Maine and Boston, various, 14s. to 20s. do.; Californian Newtown Pippins, 4s. 8s. to 8s. 6d. per case; 5s. 7s. to 7s. 6d. do.; Oranges, Valencia, ordinary, 420's, stamped paper, 8s. 6d. to 9s. 6d. per box; do., plain paper, 7s. 6d. to 8s. 6d.; large 420's, stamped paper, 10s. to 11s.; do., plain paper, 9s. to 10s.; extra large 420's, stamped papers, 11s. to 12s.; do., plain papers, 10s. to 11s.; large and extra large 714's, 12s. to 14s., all for sound fruit; Jaffa, 144's and 152's, 11s. 6d. to 12s. 6d. per case; Malaga, bitter, half-chest, 10s. 6d. to 11s. 6d.; Palermo do., 200's, 7s. 6d. to 8s. 6d.; do., 240's, 7s. to 7s. 6d. per case; Lemons, Palermo, 8s. to 10s.; 800's, 7s. to 8s. 6d.; Bananas, extras, 10s. to 16s. per bunch; No. 1, 7s. 6d. to 8s. 6d. do.; No. 2, 5s. 6d. to 6s. 6d. do.; Grapes, English, new, 1s. to 2s. per lb.; Mushrooms, 1s. to 1s. 3d. do.; Tomatoes, Canary deeps, finest medium, 3s. to 3s. 6d.; others, 2s. 3d. to 3s. do.; Onions, Valencia, 4s. 8s. to 5s. per case; 5's, 8s. 9d. to 9s. 3d. do.; Globes, bags, 6s. to 6s. 6d.

LIVERPOOL: February 27.—Wholesale Vegetable Market. Potatoes, per cwt.: Lynn Greys, 4s. to 4s. 3d.; Bruce, 4s. 3d. to 4s. 6d.; Up-to-Date, 4s. to 4s. 4d.; Main Crop, 4s. 3d. to 4s. 9d.; Turnips, 6d. to 9d. per dozen bunches; Swedes, 1s. 2d. to 1s. 3d. per cwt.; Carrots, 2s. 3d. to 2s. 9d. do.; Onions, English, 5s. to 5s. 6d. do.; do., foreign, 2s. 6d. to 3s. 3d. do.; Parsley, 6d. to 8d. per dozen bunches; Cauliflowers, 1s. to 2s. per dozen; Cabbages, 4d. to 8d. do.; Celery, 6d. to 1s. 3d. do. St. John's: Potatoes, 1s. 2d. per peck; do., new, 8d. per lb.; Grapes, English, 1s. 6d. to 2s. 6d. do.; do., foreign, 8d. do.; Pineapples, 5s. to 6s. each; Apples, 2d. to 4d. per lb.; Asparagus, 1s. per 100 and bundle; Cucumbers, 1s. each; Mushrooms, 1s. 4d. to 1s. 6d. per lb.; Birkenhead: Potatoes, 1s. 2d. per peck; Grapes, English, 1s. 6d. to 3s. 6d. per lb.; do., foreign, 10d. do.; Mushrooms, 1s. to 1s. 6d. do.

CORN.

AVERAGE PRICES of British Corn (per imperial qr.), for the week ending February 23, and for the corresponding period of 1900, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1900.	1901.	Difference.
Wheat	s. d.	s. d.	s. d.
Barley	26 3	26 1	- 0 2
Oats	25 1	25 0	- 0 1
	16 0	17 7	+ 0 10

ANSWERS TO CORRESPONDENTS.

ARSENIC AND WATER AS A MEANS OF FREEING WALKS FROM WEEDS: *F. F.* There is no need to boil the weedkiller, as is the case if agricultural salt be used. Live edgings must be protected by ridges of sand, gravel, or boards, and pheasants and domestic fowls, pigeons, &c., should be kept off the walks. Salt applied in dry weather is as efficient, and not dangerous, except to plants.

BOOKS: *G. W.* *Studies in Forestry*, by John Nisbet, D. Sc., Oxford, Clarendon Press.

BROWNING OF VINE LEAVES: *H. M.* This is a case of "brunissure," well known in the French vineyards. The disease was described in this paper (February 18, 1899, p. 98), and we can add little to that article. Investigators with ample opportunity of following out the disease differ as to the cause, but all agree that good cultivation goes a long way in preventing it. In the present case, browning starts from the veins and extends into the green parts of the leaf. This suggests something wrong with the water supply from root to foliage. Examine the border to see whether drainage is what it should be. It might also be induced if the temperature of the house has been allowed to fall suddenly. *W. G. S., Leeds.*

BRYONY: *A. B.* The plant is a perennial climber, belonging to Cucurbitaceæ. Seed may be sown in August and September in the open ground; flowers appear in June and last to September. It is good for covering arbors, fences, &c. The seed lies a long time before it germinates, which makes spring sowings uncertain.

CANNA, SALVIA PATENS, SALPIGLOSSIS, AND ANTIRRHINUM FOR EARLY WORK: *Hortus.* The first may be started in a warm frame in the present month, dividing them into pieces, each furnished with a bud or two. Pot in fairly moist soil, and afford no water till roots form generally. Bottom-heat is necessary with much divided roots to start them strongly. Employ a loamy soil, giving leaf-mould $\frac{1}{2}$ in the repotting later. The second may be slightly divided, and boxed or potted. It will be soon enough to do this at the end of the month, using slightly warm, and keeping near the glass in order to prevent drawing. As soon as growth has fairly begun, the plants must be afforded gradually, more and more air. The tips of the shoots may be taken off 2 inches in length and struck in bottom-heat if increase of stock be desired. The third may be raised from seed which, by the way, is very minute, sown thinly on sandy, well-sifted loam and peat in pots and pans placed in heat of 60° to 65°. Sowings may be made at the end of the month, and in April. In order to obtain Antirrhinums in bloom in the summer season, the best time to sow the seeds is from the middle of the present month till the middle of April. Seeds may also be sown in the autumn. The seeds at the present season should be sown thinly on a spent hot-bed, or in pots and pans, and being very small, they should not be covered with soil, but be patted with a spade or piece of smooth board into the soil. Germination is rather slow, and the seed-bed must be kept continuously moderately moist till it has taken place. The young plants may have the leader stopped, and in a week later they should be transplanted.

CARPET BEDDING-PLANTS: *Elliott.* Without the opportunity of inspecting a plan of the proposed planting, we can only afford an approximate estimate of the numbers of the plants that you name, and the price at which they might be bought. If some of the plants required for the six beds are planted at 3 inches apart, which would be a suitable distance for Alternantheras, Herniaria, Echeverias, Mesembryanthemum, Mentha, and Antennaria; and Pyrethrum partheniifolium and Lobelia at 4 inches apart, you would require to purchase 1,500 plants, which would cost at 1s. 6d. per dozen all round, the sum of £9 7s. 6d. You should obtain an estimate from a nurseryman.

CINERARIA-LEAVES INJURED: *J. Slater & Sons.* The work of the larvæ of a fly—Phytomyza nigricornis. Nip the larvæ between the thumb-nail and the finger, or take them out of the leaves with an awl or a needle, if there are but few of them, badly infested leaves being collected and burnt. No substance can be applied to the leaves to destroy the grubs that will not destroy

the former as well. Quassia-water and soft-soap made according to the usual formula might render the leaves distasteful to the fly, but as she does not feed upon them, it is not certain that it would deter the deposition of eggs.

CUTTING THE ROOTS OF PALMS: *M. P. E.* The plants are impatient of the knife, but a little pruning may be carried out, although the chief roots should be left alone. We would advise you to pot them in bulb pots instead of ordinary flower-pots, so as to get space above and below the ball for new soil, &c. Afford bottom-heat of 75° to 80° till again well rooted.

CYCLAMEN "PAPILIO": *M. E. M.* The coloured fringe at the edge is very pretty and effective.

DAW'S CHAMPION RHUBARB: *Market Grower.* We think you might ascertain from whom the variety may be obtained by applying to Mr. W. Poupart, Marsh Farm, Twickenham, who exhibited the variety at the meeting of the Royal Horticultural Society on March 27, 1900.

FUNGUS: *W. H. D.* The Agaric was formerly regarded as a yellow variety of Lepiota cepestipes, but has lately come to be regarded as a distinct species under the name of Lepiota licmophora. Occasionally found during the past twenty years growing in stoves and conservatories. *M. C. C.*

GRASS TO SOW IN THE SHADE OR BENEATH TREES: *Grass.* Poa nemoralis is one of the few grasses which succeed under trees. The land if light should have a large portion of loamy soil mixed with the crust, or substituted for it, and this should be made firm, and receive a copious application of water, the soil under trees being usually dry. When the surface is in dryish condition in April, just back up the surface with a draw hoe, and sow the seed with or without an admixture of Trifolium minus, sowing the latter first, and covering it with about half an inch of soil. Then sow the former, and rake in lightly, rolling or patting the soil with a bright spade. Turf under trees should be heavily watered in dry weather, and receive a dressing of loam, wood ashes, and manure, in the late winter months. Do not mow the grass severely the first year.

KEW AND THE BRITISH MUSEUM: *T. N. C.* It is not advisable to publish your letter till the report of the Commissioners is made public. In the meantime, we have sent your letter privately to the Secretary of the Commission.

LAND AS NURSERY HELD WITHOUT AN AGREEMENT: *Nurseryman.* In this case the utmost that you can expect is that which "the custom" of the district permits. When land is held under an agreement, but no time specified for clearing the land of way-going trees and shrubs, a year, or a year and a half, is the period usually allowed, having regard to the seasons when such things may be removed safely.

LEAVES OF VIOLETS BROWNED AT THE EDGES: *Alpha.* We can discover neither insect nor fungus, but the appearance seems to be due to over strong fumigation with tobacco, or tobacco-rag, or paper; or to strong manure-water having been poured over the foliage, or ammoniacal fumes of stable-dung entering the frames.

MANURE: *M. R. C.* The rather powerful pig-manure and the almost useless Bracken should be mixed well together, and placed in a compact level oblong heap, about 2½ to 3 feet thick, and allowed to decay. It may take a year, and should be layered or covered with fresh soil, or that from the kitchen garden. The covering should not be less than 6 inches thick, should be beaten smooth, and have a saddle form, to prevent the entrance of rain into the heap. When ready for use, as it will be after turning it twice in the course of the year, mix quicklime with it, and allow this to slake for a few days, then wheel on to the quarters, and dig or trench it in without delay, not spreading it till just previous to digging it in. The lime will destroy many of the grubs, &c., which you say are present in it. The house-sewage will be serviceable in the kitchen-garden during the summer, and for applying to fruit-trees and bushes of all kinds in the summer and winter. It might be applied four times in the course of those seasons. Diluted, it would be beneficial to some kinds of flowering plants in pots that have strong roots and are rather gross feeders, but injurious to Heaths, Ferns, Azaleas, Rhododendrons, and other peat-

loving plants. If the manure in the undiluted state gives a check to growth, or a bluish tinge to the natural green colour of the leaves, then it is too powerful, and must be mixed with an equal or greater bulk of water before application.

NAMES OF FRUITS: *J. C. W.* 1, Dr. Harvey; 2, Golden Reinette; 3, Jean de Witte. The Apple sent after the above is Hughe's Golden Pippin.—*T. J.* 1, Calville Blanche d'Hiver; 2, Scarlet Leadington; 3, Holland Pippin; 4, Scarlet Pearmain; 5, Golden Russet.—*J. B.* You should affix the numbers more securely. The bright-looking Apple is Scarlet Nonpareil, and the other, with some russet upon it, and softer, Blenheim Orange Pippin.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*R.* Pinus tuberculata, now called P. attenuata.—*R. N. H.* Two remarkably fine varieties of Cattleya Percivaliana, and flowers of Cologynne flaccida.—*M. E. M.* We are not able to name the leaf of the tropical African plant.—*Z. Y. X.* 1, Thuya dolabrata; 2, Cupressus Lawsoniana, variegated form; 3, Cupressus Lawsoniana; 4, Juniperus (form of); 5, Cryptomeria japonica var. elegans; 6, Sequoia sempervirens, the Red Wood.—*J. B.* Bignonia venusta.—*A. C.* Manettia bicolor; Apples next week.—*R. H. W.* Maranta Makoyana.—*S. W. S.* Bilbergia nutans.—*G. J. F.* Both varieties of Dendrobium nobile.—*Croydon.* Oncidium obryzatum, so far as we can judge from the poor specimen sent.—*Blackboy.* Next week.

PERILLA: *Hortus.* Seed may be sown at the end of March or in April, and placed in a frame on a spent hot-bed. Prick off early, and grow on in slight warmth, and finally treat cold for a period of a fortnight before planting out.

PHILODENDRON ANDREANUM: *M. E. M.* Very striking, but not generally grown, otherwise we do not think it would be difficult to flower.

PLANS OF FLOWER BEDS: *G. B.* Apply to Messrs. Cannell & Sons, Swanley, Kent.

PLANTS IN GARDENS 200 YEARS AGO: *W. W.* This is much too large a question for us to answer here. Consult such a book as Canon Ellacombe's *Plant Lore of Shakespeare*.

PRIMULA OBCONICA: *M. E. M.* Large flowers, but we did not detect any fragrance.

SOLANUM PYRACANTHUM: *A. J. M.* By sowing seeds at this season, plants 12 inches high may be readily obtained by June 10. Sow either singly or three seeds in a large 60, in fairly rich loamy soil; plunge in bottom-heat till germination has taken place; then remove from the plunging-bed, standing them on the surface for a week; afterwards remove to a shelf in the stove, and later to a less warm house. Where more than one seed is growing in a pot, reduce to one plant; afford the plants a shift into larger pots as the soil becomes filled with roots, and keep them always near the glass, to prevent drawing. The species will reach a height of 5 feet, but may be kept dwarf, if it be so desired, by keeping them in pots, and sinking these below the ground-level. All of the ornamental-leaved Solanums may be raised in this manner, or by sowing late in the summer and over-wintering them in an intermediate-house.

STARTING IN BUSINESS: *Vino, Leicester.* We should say "Don't," before undergoing two or three years' course of training and instruction in a market garden or nursery. We would rather not advise you otherwise, seeing that you are destitute of practical knowledge.

COMMUNICATIONS RECEIVED.—*G. B.*—Blackboy—*J. B.*—*A. O.*—*G. B.*—Paget Toynbee—*H. R.*—*A. W.*—*J. C.*—*W. S.*—*A. E. S.*—*W. F. H.*—*W. E. L.*—*L. B.*—*New York.*—*Laughton & Co.*—*H. C. & Sons.*—*C. A.*—*Jno. Snell*—*C. T.*—*W. M.*—*E. W.*—*A. G.*—*De B. C.*—*W. W.*—*W. H. P.*—*W. R.*—*J. W. B.*—*N. E. B.*—*E. C.*—*A. D.*—*W. C.*—*Wild Rose*—*E. B.*—*H. W. H.*—*H. J. D.*—*C. Austin.*—*G. B.*—*A. C.*—*M. M. R.*—*C. H.*—*F. W. S.*—*E. H. J.*—*S. A.*

DIED.—On the 23rd inst., Eliza, wife of Mr. Robert Fenn, Cottage Farm, Sulhamstead. Aged sixty-five years.

(For Weather, see p. xv.)



THE

Gardeners' Chronicle

No. 741.—SATURDAY, MAR. 9, 1901.

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DAUGHTERS OF THE YEAR.

FEBRUARY.

SHORTEST of the year's daughters is February, but one must say of her, as Helena said of Hermia, "Though she be but little she is fierce." Of her twenty-eight days, three-fourths at least are wintry, protracting January asperities, or flouting January mildness. But, later in the Play, when the purple juice of Love-in-idleness had brought back Lysander to her arms, Hermia regained the soft tongue and genial temper which had won her lover at the first. And so, as February nears her close, she not seldom turns from dismal iteration of the past to predictive rehearsal of the future. If we likened January to a cradled infant, February is a growing girl; freakish, wilful, petulant, until her teens are reached, then crossed by moods of gentleness and previsions of maturer maidenhood. March touches the point where brook and river meet, relapsing now and then into frolicsome childish pranks, oftener self-conscious and expectant, sobered by awakening maturity, her face "set thitherwards," as were those of Bunyan's pilgrims. April is bewitching but hysterical, wears—

A tearful grace, as though she stood
Between the rainbow and the sun;

June is Madonna-like in bloom of early matronhood. Let those who will, follow on

the characterisation into the glowing afternoon and mellow evening of the year.

This February, it must be owned, was hoydenish; opened in brilliant sunshine; with touching fidelity to a sixty years' tradition, preserved Queen's weather till the white bier had reached its final earthly resting-place, then broke into inclemency, which would have spoilt the pageantry of a nation's loving tribute. Since then her moods have been detestable; frost, snow, fog, rain, sludge, relieving one another as Charles Lamb found a gum-boil to relieve a tooth-ache. Yet with all this, February improves on January; an unimaginative age has ceased to usher it in with Candlemas illuminations, but Nature keeps the feast. Five o'clock tea arrives unheralded by a lamp; the rare midday sun is felt as well as seen; in early dawn the casement grows a glimmering square at seven instead of eight o'clock. The far-off melodies of spring are faintly heard; the song-thrush, Keble's "sweet bird up earliest in the morn, up earliest in the year," rings its matin bell; the blackbird follows suit with silver tongue; the castanets of the starlings sound as they prospect for early grubs amongst the grass; the blue-tit sounds its sharp "twe twe, twe-twe;" the greater tit its importunate "pinker, pinker, pinker;" the cock chaffinch, coming with its fiancée for crumbs, shows on his breast the deeper red of breeding time; at intervals the rooks hold caw-cuses to arrange domestic legislation for the coming session; while the robins' fitful minor key has given place to carolling sustained and jubilant. Presently—

"Out of the snow the Snowdrop,
Out of death comes life,"

sings the poor Scotch weaver-boy, David Gray, whose genius good Lord Houghton recognised, cheered his sufferings, published his poems after their author's early death. They come out of the snow, but are not happy till the snow has gone. They cling together, and nod their helmeted heads, their perianths remaining closed like the white cornelian "drops" or pendants of sixteenth-century ornament from which they are said to take their name; stems and leaves still short, clumps scarce and inconspicuous, until a few mild days expand the blooms, disclose the emerald eye, reveal them flourishing in all unexpected places to which birds or wind dispersed their seeds two years ago.

To-day, on the 25th, we have a soft sunny parenthesis between a clouded past and a coming gale cabled by sage Hippotades from America. I go slowly round, my eyes upon the ground, like Wordsworth's Old Cumberland Beggar,—"One little span of earth is all his prospect"—to note the heralds of the spring. Under a south wall the first Crocus is wide open; beneath the Ilexes, Aconites blend with Snowdrops, leaving spaces on which ere long the Wood Anemones will spring up. One or two crimson stigmas show upon the Hazels, and the points of the Hawthorn leaf-buds are swollen and red, centred with a white speck, which will by-and-by become green leaf. The purple-spotted scrolls of Arum leaves are tall, and beginning to diverge; an inch above ground are spikes of Crown Imperial, and of handsome but funereal Scopolia. Here and there is a gold-laced Polyanthus, looking uncomfortable like a guest who arrives before the rooms are ready, and shy mud-splashed Primroses peep out of their thick leaves. Blooms of Cydonia japonica are caught and blackened by the 19° frost of the 13th; the Brompton Stocks

were covered up and unharmed. Periwinkles white and blue are numerous, Daffodil buds rising from between their blades, blooms of purple Comfrey opening, the trifoliate leaves of Dondia flattening out upon the surface of the soil. The orchestra is tuning for the performance, as the nursery song says prettily—

"I see them all, a shadowy throng,
Each taking its own part;
Wait, only wait, and each in turn,
'Ere long will cheer your heart."

I lay down my pen reluctantly, hardly believing in the completion of the task I undertook—

"To set the bright procession on its way,
And marshal all the order of the year."

It seems like yesterday when I began to chronicle; but the months fly past me now, as in the old coaching days the milestones, unheeded and uncounted at a journey's outset, came fast and noticeable towards its close. Some day a voice, inaudible to those around him, summons the passenger to descend; for him the journey's end has come. Meanwhile I have tried, along with scholarly and poetic gossip, the best I could devise, to indicate my own conception of what a garden ought to be—a museum of floral treasures first of all, open alike to gentle and to simple folk, as is a lovely Gainsborough garden, whose accomplished owner once a week sets wide its gates to all who choose to come—aided, not superseded, by accessories of trim walks, and shaven lawns, and Fern-fringed pools, and glowing beds, and shadows brown that Sylvan loves. In such a paradise its master sits or saunters, and eyes affectionately the mute yet eloquent friends which fill his borders. Apart from their ever-ascending incense of healthy growth, and brilliant colouring, and ordered harmony of group, each has for him its own tale to tell—of the far-off spot from which it came, detached in knapsacked walking tour; the bit of Sophocles, Virgil, Shakespeare, Wordsworth, Tennyson, which it embalms; the hint of botanical discovery which it engendered; the friend who brought it from Nile valley or Riviera shore; the measureless folk-lore bound up with its grotesque, or religious, or historic name—all touching like piano notes in turn the subtle wires of his mind, and reviving in continuous sequent ripple the thoughts they raised when planted long ago.

For myself, if I must go down the hill, let me descend it hand in hand with Nature—Nature at her best. "Tranquillity of mind, enhancing rest of body," says Sir Wm. Temple, "resides in gardens as in nowhere else." I own to have found it there. My parting aspiration to the kind friends who have received indulgently an old man's garrulous confidences in all these pleasant months, and to whom, not without some sadness, he makes his farewell bow, is that they may find it too. *Corycius senex.*

ORCHID NOTES AND GLEANINGS.

THE ZEBRA ORCHID, ARACHNANTHE (VANDA) CATHCARTI.

In habit of growth, and in the transverse barring of the sepals and petals within, this plant reminds one of the Renantheras. It was introduced to Europe from the Sikkim Himalayas in 1864, and first flowered in Mr. Chas. Stead's collection at The Knoll, Baildon, near Leeds, in 1869. It bloomed again in 1870, and a sketch appeared in the *Gardeners' Chronicle*, fig. 1409. Even now it is far from abundant in collections, although a most

distinct and remarkable species in many ways. Its solid waxy lip is delicately hinged, or poised, and its mobility may have some influence on the fertilisation of the flowers by insects in its native wilds. The fresh flowers sent herewith were grown by Mr. F. Bedford, at Straffan Gardens, Co. Kildare, where the plant is happy in a warm, moist, and half-shady stove (fig. 60). *F. W. Burbidge.*

LYCASTE SKINNERI.

The original type of this handsome winter and spring-flowering Orchid, brought by its discoverer, Mr. G. Ure Skinner, from Guatemala, in 1841, is still the best, and it has been imported many times in large quantities from the same district. But as with most other Orchids, a bad type grows in certain localities, and of these the various importations sometimes bring far too many. The true, large-flowered, richly-coloured form has again been imported by Messrs. F. Sander & Co., of St. Albans, where those received last year have been making a fine show this season. Flowers of the best type are sent by Joseph Broome, Esq., Sunny Hill, Llandudno (gr., Mr. A. C. Axtell), each measuring 6 inches across diagonally, the fine, wax-like sepals being nearly 2 inches wide. The flowers vary from bluish-white to light rose colour, the showy labellums having fine spotting of a ruby-crimson colour. It is one of the showiest of cool-house Orchids. Some time ago certain Orchid-growers advocated growing this and some other Orchids in decomposed leaf-soil. It would be interesting to know whether the results warrant a continuation of the practice.

THE COLLECTION AT COUNDON COURT, COVENTRY.

When the owner of a collection of Orchids expresses entire satisfaction with the condition of the plants, his gardener may justly feel proud of the encomium; and when, as in this case, any failures have been overcome, and suitable methods of treatment of some once refractory plants discovered, the satisfaction of owner and gardener alike is only natural. Such a state of things obtains in the large and well-managed collection belonging to George Singer, Esq., so skilfully managed by his gardener, Mr. Collier.

Mr. Singer has been an Orchid cultivator for many years, and his failures and successes have taught that in order to obtain success in the cultivation of Orchids, the inside arrangements of the houses and the heating must be suited to the needs of the plants. The range of Orchid-houses at Coundon Court is the best obtainable in every particular for affording every specimen its proper place and position. Special plants are either suspended, or placed where they will be constantly under the eye of the gardener, and Mr. G. Singer; and no plant which is deemed unworthy is retained after it has flowered, and thus the crowding and injury of valuable plants by those of indifferent quality, often observed in collections, are avoided. The result is that the collection throughout is in an uniformly fine and healthy condition. *Odontoglossums*, *Cypripediums*, *Cattleyas*, *Lælias*, and *Lælio-Cattleyas*, and hybrid Orchids generally, form the bulk of the collection, and at the present time the beauties of the display are highly appreciated.

In the first house we entered, the semi-circular staging was filled with plants in flower, the chief feature being a magnificent lot of very fine varieties of *Cattleya Trianaei*, the central plant possessing about two dozen blooms. All shades of colour known in the species are represented, the richer coloured varieties predominating. Two of them flowering for the first time were very handsome, the finely formed flowers having a showy purplish feathering on the petals, and a glowing purplish-crimson tint on the fore part of the lip. In the same house, some fine plants of *Cymbidium Lowianum*, *Lycaste Skinneri*, *Dendrobium × splendidissimum* *Leeanum*, and other varieties of the same class; *D. atro-violaceum*, varieties of *Lælia anceps*, and *Oncidium splendidum*, formed part of the floral arrangement.

An adjoining span-roofed house was furnished with a fine collection of *Cattleyas* and *Lælias*, some of which were in flower, but the greater number in bud. We noted fine specimens of *C. intermedia alba*; and in sheath was a very ample assortment of albinos, there being *C. Mossii* *Wagneri*, *C. Eldorado alba*, *C. labiata alba*, and others. Besides these we remarked plants of *C. × Weedoniensis* (*Mendeli × granulosa*) in bud, *C. × Minucia* *Ashtoni*, *C. × Wendlandiana*, *C. Trianaei* *Amesiana*, a pretty, white-petalled variety; *C. labiata* *Sir*

× Spicerianum), a noble form; *C. × Preweti*, and *C. × Swinburnei* magnificent, large and handsome; varieties of *C. × Euryades*, *C. × T. W. Bond* (*Swanianum × hirsutissimum*), figured in the *Gardeners' Chronicle* recently, a very distinct variety with flowers of a dark tint; *C. × T. B. Haywood*, *C. × Gertrude* *Hollington*, *C. × Muriel* *Hollington*, *C. × Mausselli* (*Chamberlainianum × villosum*), a very distinct, bronzy-yellow flower of quaint form; *C. × Lathamianum* *superbum*, *C. × Leeaenum* *Prospero*, *C. × Actæus*, *C. × Chapmani*,

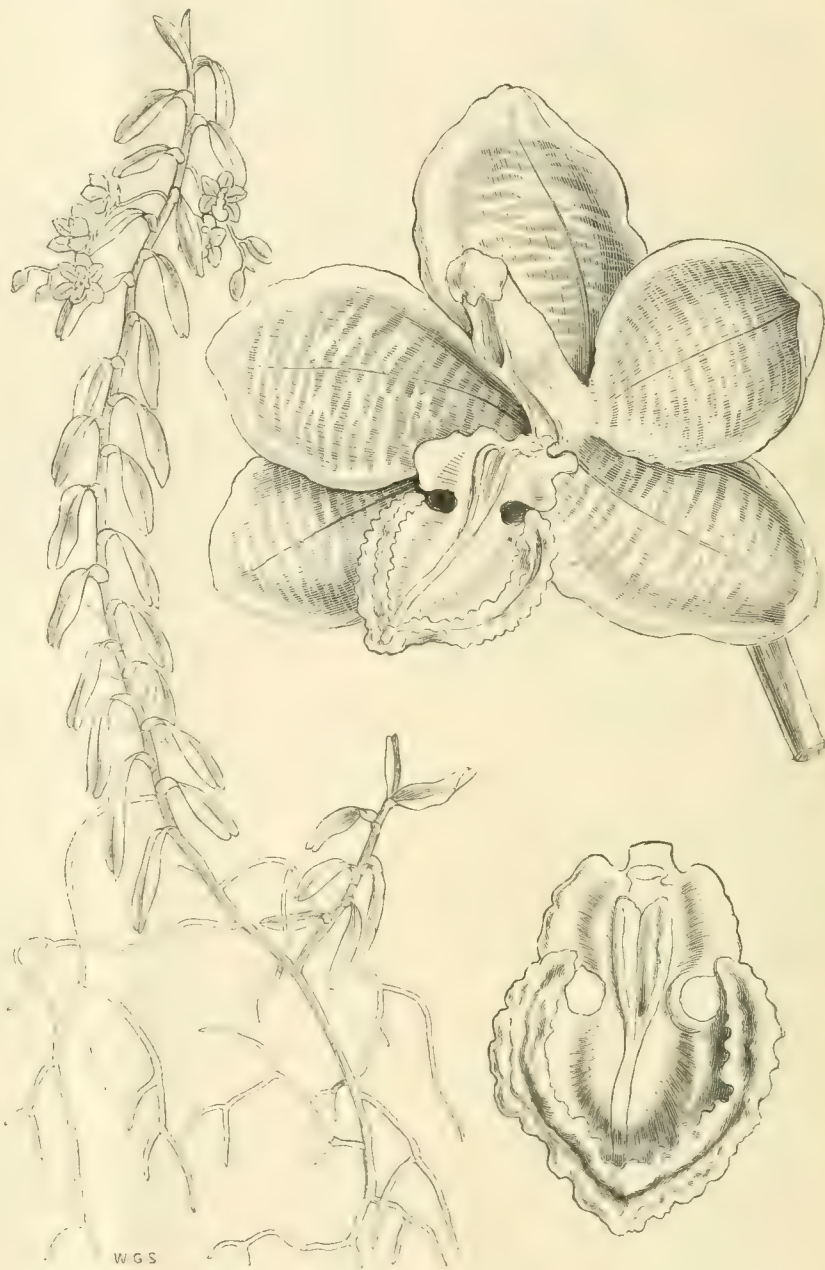


FIG. 60.—ARACHNANTHE (VANDA) CATHCARTI. (SEE P. 149.)

George White, an albino with purple feathering in the lip; *Lælio-Cattleya × Macfarlanei*, fine in shape and beautiful in colour; *L.-C. × Charlesworthi*, *L.-C. × Dominiana*, *L.-C. × Admiral* *Dewey*, *L.-C. × illuminosa*, *L.-C. × Warnhamensis* in flower; and representatives of many of the best hybrids. Suspended in this house, there were remarked many rare specimens, viz., *Lælia Jongheana*, with five spikes, carrying in all ten flowers; large ones of *C. Lawrenceana*, and *C. Eldorado* *Wallisii*, which have been raised from small-sized plants.

The next house entered contained a fine collection of *Cypripediums*, with many of the plants in flower. We may mention *C. × Surprise* (*Sallieri*

a superbly spotted variety; *C. × Chas. Rickman*, and other bellatulum crosses in bud; and a select collection of *C. insignis*, including *C. i. Sandersi* and *C. i. Harefield Hall*, just over. In this house, *C. bellatulum* *album* and other delicate varieties impatient of much moisture in winter, such as *C. Aylingi* and *C. × Vipani*, are suspended near the glass of the roof. The heated corridor, or house connecting the ends of the houses, has its back wall clothed with Ferns, *Ficus* *repens*, and other foliage plants of neat habit; and suspended near the glass was noted a collection of white *Lælia anceps*, *Dendrobiums*, *Cattleya aurea*, *C. Warscewiczii*, &c.

Another range had the first division heated to stove-house temperature, and one side of it was arranged with Anthuriums, Crotons, Palms, &c., the other being occupied by Orchids. The chief objects in flower were a splendid lot of Phalænopsis, in vigorous health, and which have been grown here from small, and in some cases unhealthy

In this house *Angræcum sesquipedale*, *A. Ellisii*, and others grow and flower well, and some very large-bulbed *Dendrobium Phalænopsis* and other warm-house *Dendrobiums* are flourishing. Elevated near to the glass is a small batch of very rare *Cypripediums*, including *C. Lawrenceanum* Hyeanum and *C. callosum* Sanderæ.

ments furnished with bright red-brown blotches. The ground colour of the lip, and the central area of the petals, is white, and although in the remote past some other species may have been instrumental in causing the change of colour and beautiful spotting, the botanical features of lip and crest show little departure from a bloom of a typical *O. crispum*. The plant has been well grown, and a very strong spike of many beautiful flowers is the result. Contributing to the display of flowers are good *O. Halli*, *O. triumphans*, *O. Rossii majus*, *O. Andersonianum*, *O. luteo-purpureum sceptrum*, *O. Pescatorei*, *Cochlioda rosea*, and others, all in grand health.

In a stove-house were three large specimens of *Schomburgkia tibicinis*, which are about to give their annual display of flowers; and in the range of vineries and other fruit-houses are the *Dendrobiums* of the *D. thyrsiflorum* class, and others which have not yet finished their rest; also a fine lot of *Cœlogyne cristata*, varieties of *Cypripedium insigne*, &c.

The beautiful conservatory, of considerable length, has groups of ornamental plants arranged on its mosaic floor, and here, on special occasions, or when the weather is mild, the showy Orchids are also grouped; in the mansion also, which contains many fine pictures and works of art, and wonderful mosaic pictures, brought by Mr. Singer from Rome, the arrangements of cut Orchids show the extent of the supply of flowers in the Coundon Orchid-houses this winter. In the owner's study, cases of coloured drawings of the best things form an interesting collection; they are also useful when carefully done to compare with the flowers produced by the same plants afterwards, and indicate in what direction the plants are going. At Coundon Court the comparison should be satisfactory as the plants there are grown, and not simply suffered to live as they are in some gardens.

SUCCULENTS.*

(Continued from p. 120.)

NATURAL ORDERS.—There are many natural orders represented amongst succulent plants. It is curious and it is interesting to notice how similar conditions of climate have produced the same effects in the shape and structure of plants belonging to widely separate families. Compare in this respect *Euphorbia pendula* with *Sarcostemma Brunoniana*; the similarity of the succulent *Euphorbias* to the *Cactaceæ* is familiar to us all. Many other examples might be quoted.

CACTACEÆ.

The first family we shall deal with is the *Cactaceæ*, as it is the most important from a horticultural though not from an economic point of view. The majority of Cacti are found in the dry highlands of Mexico; some, however, are scattered far north and south in the New World. The only representative in the Old World is *Rhipsalis*, found in Tropical Africa, Mauritius, and Ceylon. Some Cacti have, however, been naturalised in various countries, as, for instance, the *Opuntias* in South Africa, where they are great pests to the farmer. There are fifteen genera, with about 1300 species. Of these genera, the one which differs least in appearance from ordinary flowering plants is the—

PERESKIA (fig. 61).

The stems of *Pereskia* are scarcely succulent, and, unlike other Cacti, they bear large green leaves. In the axils of the leaves are groups of thorns and hairs. These groups of thorns are known as areoles, and are thought to represent undeveloped lateral branches, of which the thorns are the modified leaves. The *Pereskia* is exceptional, that it produces new spines in each areole every year. An old stem of a species like *P. Bleo* is a thing to be handled with care. The flowers of this genus are borne in panicles; in the other

* A paper read before the Kew Mutual Improvement Society by Mr. W. Brown.



FIG. 61.—PERESKIA ACULEATA.

plants. Among the *Phalænopsis* in flower were *P. Schilleriana*, *P. Stuartiana*, *P. Aphrodite*, and a grand form of *P. Sanderiana*, with bright rose-coloured flowers, equal in size and shape to those of *P. amabilis*; a remarkably fine *P. × intermedia Brymeriana*, good *P. × Casta* and *P. × leucorhoda*; and, not in flower, a fine plant of a very remarkable form of *P. Aphrodite*, which the drawing shows to have abnormally large flowers.

The collection of *Odontoglossums* is extensive, many of the older plants having formed large masses, and the more recently-acquired show progressive stages of improvement in the size of the pseudo-bulbs, and quality of the flowers. A number of excellent forms of *O. crispum* were in bloom, but the centre of attraction was *O. × loochristiense coundoniense*, a yellow-flowered variety with fringed petals, all of the seg-

genera of Cactaceæ the flowers are solitary. The *Pereskias* are natives of Tropical America and the West Indies. Several species are very ornamental; they are, however, best known as stocks for *Epiphyllums*. *P. aculeata*, the commonest, is a climbing plant with white flowers; its common name of Barbadoes Gooseberry has been given to it on account of the similarity of the fruit to that of our common Gooseberry, both in appearance and flavour. This species is the one most generally used as a stock for *Epiphyllums*, although *P. Bleo* is better adapted for supporting large plants, being of much stronger habit than *P. aculeata*. *P. Bleo* was first sent from Mexico to the Botanic Gardens at Glasgow in 1827; the pale red flowers are borne in clusters, and are very decorative. *P. calandriniaefolia* takes the place of *P. aculeata* in many parts of Germany for grafting purposes.

Pereskias are easily raised from cuttings; they ought to be put in sandy soil, and placed in a warm house. Sandy loam, with which has been mixed a little lime rubbish, will suit the plants when struck.

OPUNTIAS.

From the *Pereskias* we pass to the *Opuntias*, which bear very small abortive leaves, which fall off early. In *O. subulata* and a few others, however, the leaves are larger, and remain on the plants longer. The peculiar, flattened, jointed stems, with which we are all so familiar, are the most common in the genus, although some, as *O. Kleinia* and *O. cylindrica*, have cylindrical stems. *O. brasiliensis* combines the two forms, the main stem being cylindrical, bearing branches flattened in the usual way. Altogether there are about 150 species of *Opuntia*, chiefly from California, Mexico, Chili, and Peru. They are all of easy culture, growing in any sandy soil. *O. vulgaris* was the first Cactus brought to England; it has pale yellow flowers, and its edible fruits are well known as Prickly Pears. *O. Rafinesquii* is suitable for planting outside, being one of the most hardy. *O. missouriensis* is another very hardy species. This extends on the west side of the Rocky Mountains to the north of British Columbia, where the temperature often falls 40° F. below zero.

O. Tuna is a strong grower, coming from the West Indies, where it is used for live fences; its yellow flowers with their membrane-like petals are very pretty. *O. monacantha* has fine orange-coloured flowers. There is a curious variegated form of this species. *O. Darwini* is interesting as having been discovered in Patagonia by the great naturalist whose name it bears; it is one of those which have irritable stamens. Perhaps the most beautiful species is *O. basilaris*, with its purple flowers and fine fan-shaped stems of the same hue. The majority of *Opuntias* have stiff, well-developed spines, which vary in size, number, colour, &c. In some cases, however, the spines are replaced by ribbon-like, scaly appendages, as in *O. diademata* and *O. papyracantha* (fig. 63, p. 153). They are known as papery spined *Opuntias*, and form a very interesting section of the genus. There are some half-dozen species, all natives of Argentina.

NOPALEA.

N. coccinellifera is the plant which has been used for the cultivation of the cochineal insect in the Canaries and elsewhere.

Leaving the *Opuntias* and *Nopalea*, we come next to the mammillate forms of Cacti.

LEUCHTENBERGIA (fig. 62).

L. principis is the only species; it is a Mexican plant. The stem bears much elongated, tubercle-like structures with areoles and spines at their tips. The flowers are of a pretty yellow colour, about 4 inches across, and giving off a strong almond scent; it was introduced in 1847. It is somewhat difficult to grow satisfactorily, requiring very careful watering, and full exposure to the sun's rays. *W. Brown*.

(To be continued.)

RAISING HARDY FRUIT TREES FROM SEEDS.

In touching upon this subject, an interesting one from many points of view, I may state at the commencement that I am neither prepared nor competent to advocate raising fruit trees from seeds as a branch of a nurseryman's business, but rather to point out what the average gardener can do in improving the standard of these fruits by this means.

Fruits, in common with most food products, must give place to higher evolutions of their kind in each succeeding generation if real progress is to be recorded; and any fruit, however good, should not be allowed to rest whilst there is a possibility of a more useful one being raised from it. This large field of useful work should not be left in the hands of the few, who however have done and are doing good work; but should rather be taken up by gardeners everywhere with, of course, the necessary discretion in the matter of choosing suitable varieties upon which to work, and with the strength of

to the fruiting stage without a possibility of forecast as to the likelihood of any of them being improvements.

APPLES AND PEARS.

As our two staple fruits, Apples and Pears, do not reproduce themselves true from seeds, but on the contrary, seedlings which vary from their parents and from each other in a remarkable manner, and generally in a backward direction, another plan must be adopted, and that is cross-breeding with a definite purpose, only using those varieties for the purpose which possess features it is desirable to blend in their offspring, and thus obviating to a great extent many years of fruitless work in trying to secure a chance sport of merit, reducing almost entirely the expense of cultivating numerous seedlings with the same intent. That cross-breeding will also result in numbers of worthless forms must be allowed, but the chances are greater that a number of improved forms will accrue, than where natural variation is alone trusted to. It is a fair question for discussion, how many of the best varieties of to-day are the results of accidental cross-fertilisation? A hive of bees working over an orchard or garden whilst the trees are in flower, as well as wind, must convey a considerable amount of pollen from one tree to another; and the wonder is that so few good varieties are raised from seeds produced under conditions so highly favourable to inter-crossing. A few of our best fruits are known to be results of cross-fertilisation with a definite object, and they are such as would encourage further efforts in this direction.

The work of raising the trees from seeds is best considered in the autumn, when the best varieties to employ for the end in view will be most readily apparent. Having marked these, nothing further can be done until the spring, when the flowers are ready for pollination. It is best to fertilise an entire truss, and enclose it in a muslin bag, in order to prevent other pollen reaching it. Adjacent flower-trusses and the stamens of the flowers selected for pollination should be removed a few days previously. It is also advisable to reverse the cross at the same time. Only the most shapely and best flavoured fruits of the cross should be saved for their seeds, which may be extracted immediately the fruit is ripe, and sown forthwith, either in pots or in a frame. This is better than planting in the open, as germination takes place quicker when the seeds are protected in the winter. *Geo. B. Mallett, Isleworth.*

(To be continued.)



FIG. 62.—LEUCHTENBERGIA PRINCIPIS.

mind necessary to eliminate all bad forms immediately they are detected, lest the good that is done be swamped by varieties either no better than we have already, or quite unworthy of perpetuation.

SELECTION.

The oldest plan of raising new kinds of fruit trees (and one that obtains now with stone fruits, especially those which reproduce themselves with tolerable certainty from seeds) is that of selecting the choicest fruits of approved varieties, planting their seeds, and trusting to the resulting seedlings to produce something better than their parent—that parent itself being a highly-evolved form of what would for our purpose be a worthless tree. It obtains, therefore, that any disturbance of the *status quo*, without the counteracting influence of pollen from a similarly highly evolved form, would naturally lead to the production of a greater number of reverted seedlings than improved ones, and that any such improved varieties must be regarded as pure sports or variations, each in their turn producing offspring, the majority of which revert to a previous form.

CROSS-BREEDING.

That this plan of trusting to chance is defective from an economical point of view is obvious, as an enormous number of seedlings must be grown on

NOTES FROM A GARDEN AT NICE.

SINCE writing my last notes, we have been indulging in a spell of arctic weather—arctic, that is to say, for this part of the world. As low a temperature as 6° C. was registered in Nice during January, and there are still (mid-February) frosts at night, and a bitter wind off the snow mountains during the day. The oldest inhabitants have racked their brains to remember so severe a winter, without avail, they say, as they seem to make quite a personal matter of any reflections upon the geniality of their winter climate. They do not, however, promise better things, so long as the snow is lying low down on the mountain slopes, as one sees it now. I find it quite upsetting to one's ideas of the fitness of things to stand in a bitter wind with the tanks in the garden covered with ice, and see the trees laden with Oranges and Lemons. Lemon-trees have suffered a good deal, but both Oranges and Olives will stand a low temperature without injury, provided the cold is not very prolonged, probably owing to the wood having been so thoroughly ripened during the hot, dry summer and autumn.

The cold played havoc with the Strawberries before we could get shelters over them, and ripe fruit would be worth 100 francs a kilo (about 2 lb.) in Nice now. Any Roses not under glass have also suffered considerably, the buds being nipped just where they join the stem. What blooms do open

are very poor, and the cold has practically put a stop to the winter blooming, which is the only one of any importance from the market gardener's point of view. They will be full of flower again in May, but will bloom unregarded, for the voice of the stranger will then be heard no more in the land, and Nice will be, to all intents and purposes, empty, in spite of its summer population of native residents.

In my last notes I mentioned that many of our Roses were on their own roots, grown from cuttings; but Teas and the choicer sorts are grafted or budded, *Rosa indica* being used as a

planting. I have not seen it incorporated with the soil when cultivation is going on, but the method of digging would render this difficult.

The Roses we are planting are Paul Neron, Capitaine Christy, and Ulrich Brunner; the latter a beautiful red Rose, somewhat resembling the American Beauty of the United States, and much in demand among florists here, who will give up to 12 francs per dozen at this time of the year for fine blooms. Prices are ruling very high for flowers just now, owing to the cold weather, and also to the fact that it is Carnival time, with its attendant battles of flowers and numerous balls. Carnations

species most in demand; now is *Acacia dealbata*, which succeeds here best when grafted on *A. retinodes*, or one of its varieties. The latter is very vigorous and free-growing, will grow in almost any soil, and flowers at most seasons of the year. It grows freely from seed, and was perhaps the species first introduced into Provence, where many hybrids have sprung from it. There are numerous varieties of *A. retinodes* (*nerifolia*), *floribunda*, *latifolia*, &c. Few plants grown for cut flowers are more remunerative than *Acacia dealbata*, and both foliage and flowers are decorative. It is also sold by weight, and thousands of baskets are sent off annually to London, Paris, St. Petersburg, and indeed, most of the cities in Europe. Its good travelling qualities render it valuable for this purpose, and it is taken out of the baskets in Paris and London almost as fresh as when put in. It grows freely on its own roots in the soils found about Cannes and Golfe Juan; but in the calcareous soils in this neighbourhood it is best to use a more vigorous stock. In order to have early flowers in time for Christmas, branches of *Acacia* are cut when in bud, and kept until they open, in basins of tepid water in a warm room or greenhouse. Another beautiful species is *A. cyanophylla*. This blossoms a little later, and in March will be a beautiful object with its bluish foliage and cascades of yellow flowers; it is more dwarf in habit, and has rather slender branches. *A. Farnesiana* is largely grown in the neighbourhood of Grasse for perfumery purposes, its flowers being very fragrant.

To advert to the more prosaic subject of vegetables, I have been observing with interest the method adopted by Niçois gardeners for obtaining an early crop of Tomatoes in April or May. As I mentioned in a previous note, sowings were made in a cold frame in November or December, and these seedlings have been allowed to stand thickly in the seed-bed until the end of January. Air was admitted, and little water given, presumably to counteract the evil tendencies of seedlings grown on these Mustard-and-Cress lines! Hotbeds were then made up in a frame covered with 4 inches to 6 inches of fine soil, and the seedlings pricked out 6 inches by 4 inches, very loosely planted on anything but a firm bed; from this they will be planted out in rows about 1 foot apart, and covered with glass in the usual way. More later sowings are planted out direct from the seed-bed, and grown without shelter.

I understand that this is the method always adopted here, and as the production of a strong plant does not seem to be a feature of the cultivation, it will be interesting to note the yield of fruit per plant. The dry atmosphere and constant sunshine possibly prevent fungoid attacks, to which weak, sappy plants of this kind would probably fall victims in England.

In my next notes I hope to give some details of the winter culture of Carnations, which is a special horticultural feature of this part of the Riviera from Nice to Toulon, where it may be said to have been brought to perfection. *M. M. R.*

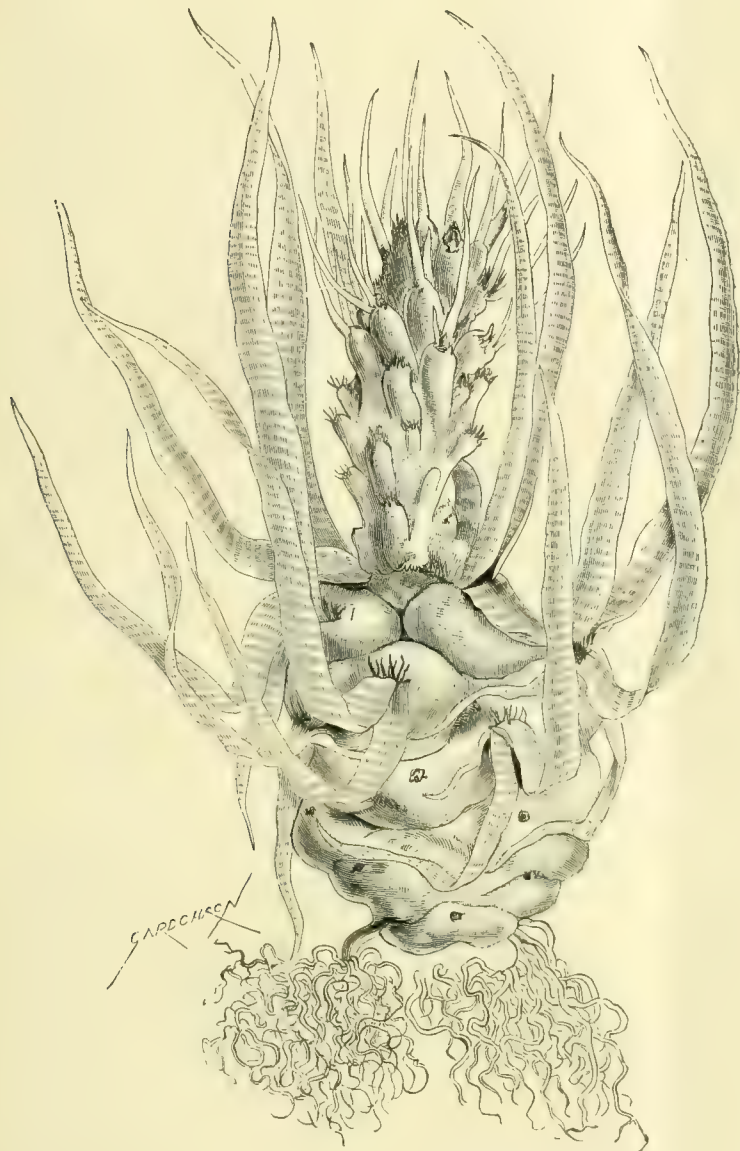


FIG. 63.—*OPUNTIA PAPYRACANTHA*. (SEE P. 152.)

stock. Some gardeners graft now instead of budding in the summer; they lift the stocks for the purpose, do the work indoors in the evenings, and replant. There does not seem to be any special advantage to be claimed for the system. We are preparing a piece of ground now for planting with choice Roses, to be grown under glass, for next season. It was just deeply dug; trenches were then opened about 3 feet apart, half filled with stable-manure, and filled up with soil ready for planting, the Roses being planted over the manure about 1 foot apart. Space is economised, as the trees are thrown away after three years' forcing, and liquid-manure is largely used. Manure is almost always applied to the soil in trenches before

bring from 1½*d.* to 4*d.* each in the market, or from 1·50 franc to 4 francs per dozen; and retail prices are, of course, proportionately, or sometimes disproportionately, higher.

Violets are blooming everywhere now—wild sweet Violets under the Olive-trees by the roadside and on the hills and in gardens, chiefly Czar and Princess of Wales varieties. I have not seen Amiral Avellan growing here, or in the market. These flowers are sold by weight—this year 9 to 10 francs per kilo, in normal seasons as to weather conditions at about 4 francs for the same quantity, and Violets do not weigh heavy!

Mimosa (*Acacia*) is greatly in demand for decorating carriages, &c., and very effective it is. The

VEGETABLES.

CULINARY PEA GLORY OF DEVON.

A WORD should be said in favour of this grand Pea. Having given it a trial last year I consider it to be one of the finest introduced in recent years. It is a plant of robust growth, capable of resisting mildew, and a heavy cropper, the haulm being covered with large, slightly curved pods, which are well filled with large seeds of a green tint. The flavour of the peas is delicious when cooked. Although the weather was very dry and hot at the time the Pea was podding, the plants remained in good condition longer than some others growing beside it. Glory of Devon is an excellent variety for a gentleman's table or the market grower, it being first-class in every way. *F. Q. C., Liffon Park Gardens, Devon.*

TWO USEFUL TOMATOS.

I have tried the Yellow Sunbeam and the White Chiswick Peach. The former makes a better jam than the green Tomatos which remain on the plants grown outside at the end of the season.

The latter is more interesting. It is white, but that is not all. Some Chiswick Peaches fell off the tree, and became embedded among some dead leaves on the ground. I had a lot of other Tomatos, and so did not gather them. There came a week of rain, pouring off and on, soaking the leaves, and these poor things among them. At last, I took pity on them, and gathered them. To my astonishment, after a week's soaking, they were as sound as on the day they fell off the tree!

It would appear that this white Tomato might prove to be a long-keeping fruit. If so, it would become a valuable variety. Sometimes the red Tomatos will rot while on the tree, but this white one showed not a trace of rotting after being soaked on the ground for a week.

I have not been able to discover any difference in flavour between the red, white, and yellow Tomatos when fried; all three are good. I asked a fruiterer one day if he would like to have some yellow Tomatos to see if he could sell them. He said, "No." "Why?" "Because nobody will have them." People have not yet learnt what a nice jam they make.

The post-office close by is in a confectioner's shop; one day I asked the lady confectioner whether she was aware that green Tomatos and yellow Tomatos made a capital jam. "I never heard of it," she said. Well, one day I took her a basketful of yellow ones, and with them I gave her the recipe for the jam. "You have a lot of children, and I am sure they will enjoy the Tomato-jam." The next time I went to post a letter, I enquired about the jam. She said, "I was astonished to see how nice a jam they make."

In the winter a lot of red Tomatos appear in the shops which are said to come from Teneriffe. I have often tried them, and have invariably found them the most tasteless Tomatos I ever came across. Perfectly worthless; but being red, people buy them. They cannot get rid of the idea yet, that a Tomato should be red.

If, as I surmise, the Chiswick Peach should prove to be a good long-keeping variety, it will become valuable, if people will take to it. *E. Bonavia, M.D., Sussex, February 13, 1901.*

THE WEEK'S WORK.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. I. MEASURES, Esq., Cambridge Lodge, Flodden Road, Camberwell.

Dendrobium Wardianum is generally regarded as a species which deteriorates under cultivation in a few years. There are, however, some few places where the plant is maintained in good condition for lengthy periods of time, but these are exceptions. Fortunately importations of this species of *Dendrobium* are frequent, and fresh plants can be readily obtained. When some newly-imported plants have been procured, the plants should be potted with despatch, growth in such plants as I have seen being in an advanced state. It may, perhaps, not be out of place to warn my readers against introducing the destructive *Dendrobium-beetle*. To guard against this mishap, cut away all dead and decaying parts of the plants, especially that at the bottoms of the pseudo-bulbs, and thoroughly cleanse every portion which might conceal this pest. It is a good plan to immerse the matted portions of the roots in water for a few minutes—a capital means of dislodging the beetles, as they must quickly rise to the surface to obtain air, when they may be caught and destroyed. This beetle is much larger than the pests which come over with plants of *D. Phalaenopsis*; they are dark brown in colour, and hard in substance. If once these become established in a collection, they commit a great deal of damage among deciduous *Dendrobiums*. After the plants have been cleaned, pot them in well-drained shallow pans, and avoid putting a large quantity of materials

about the roots. Hang the plants where the pseudo-bulbs or stems may roam at will as they grow, as the plant should not be attached to anything until growth is mature.

Miltonia vexillaria.—The winter has been favourable to the growth of the large-flowered section of *Miltonia*, and although this section should be grown in a slightly warmer house than *Odontoglossums* in the winter months, no plants are more liable to injury by the prolonged use of artificial heat, the leaves on the older growths quickly turning yellow and decaying, and the young growth in its tender stage falling a prey to thrips—pests which work much harm by retarding growth and disfiguring the leaves. At this season the new pseudo-bulbs are being formed, and the flower-spikes may on examination be observed low down in the axils of the leaves, and roots forming at the base of the maturing growths. At this stage of growth the plants may be repotted. It is better to turn the plants out of their pots and repot them annually about the first or second week in March than at any other season. I am aware that many orchidists pot these plants in the month of September; but there is then not the same amount of root activity as in the spring, and as a consequence they do not get re-established so soon, and suffer more from the effects of fire-heat during the winter than is the case when repotting is performed at the present season. Before repotting is begun, every plant should be closely examined for thrips, and should any be found, let the whole stock of plants be immersed so far as regards the tops, in XL-All insecticide. I take the precaution to dip the plants in any case, for the most careful examination may fail to detect the insects. The cleansing of the plants should be carried out early on a fine day, in order that the moisture about the growths may evaporate before evening. *M. vexillaria* should be afforded plenty of root-space, and perfectly clean pots, which should be filled up to within two-thirds of their depth with clean crocks, and above these a thin layer of sphagnum-moss—preferably that from last year's stock which was picked, washed, and dried in the stove hole in readiness for use. This moss will be found to keep the compost in a better condition than living sphagnum moss. The potting compost may consist of two thirds chopped sphagnum, peat one-third; and the plant when in its proper position should have the base of the new bulb raised slightly above the level of the rim of the pot, and the compost gradually mounting up to it, with the base just below the surface. Let the compost be pressed with moderate firmness round about the base of the plant, using a pointed stick for the purpose, not the finger. The repotting finished, afford rain-water in quantity sufficient to saturate the whole, using a water-can with a rather coarse rose. Before the plants are re-arranged, let roof and side-glass staging, and all flower-pots, be thoroughly cleansed, so that there shall be no occasion to move the plants till flowering is over. Let the plants be shaded from strong sunlight until the new roots get a good hold of the compost, and afford plenty of moisture at the root, and humidity in the air, till the flowers have been removed, air being admitted in favourable weather.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HUSSEY PACE, Esq., J.P., Prestwold Hall, Loughborough.

Aspidistras.—Plants which have out-grown their pots, or become too large for decorative purposes, may now be divided. The plants should be repotted or divided very frequently, once in three to five years being about the length of time they may stay in their pots. The potting-soil may consist largely of road-scrappings (grit), loam, and leaf-soil, and stove treatment should be adopted till leaf-growth is complete, when the greenhouse will be found the best place for them. Plants not divided should be surfaced with fresh soil. *Aspidistras* are excellent for standing in cold draughty corridors, and other places where more tender plants would be injured.

Allamandas, *Clerodendrons*, *Bougainvilleas*, *Rondeletias*, and *Dipladenias*, should be potted upon the first signs of growth being observed, and encouraged to grow by generous treatment when they have got hold of the new soil. *Allamandas* and *Bougainvilleas* require as a compost turfy loam three-quarters, leaf-soil and spent Mushroom-bed-manure one-quarter, together with a quart of steamed bone-meal per barrow-load of soil. *Clero-*

dendrons and *Rondeletias* do well in turfy loam one-half, peat one-quarter, and leaf-soil one-quarter, and a good deal of sand. *Dipladenias* should have partially-decayed peat and much silver-sand. The exhausted soil from among the roots should be picked and shaken out, and the plants repotted in pots of the same size, or in others one size larger. *Allamandas* and *Bougainvilleas* of large dimensions, whose pots it is not desired to replace, may be kept in health for quite a number of years by top-dressing them at this season after removing the surface-soil, and by affording manure-water in the season of most active growth. *Allamanda grandiflora* should be grafted upon a vigorous stock, as, for example, *A. Hendersoni* or *A. nerifolia*. The potting completed, attention should be given to the requirements of the plants as regards affording water, syringing, and shading. Until growth at the root is becoming active, water must be carefully applied, as anything approaching saturation of the soil does much injury; let the plants be syringed twice daily, and three times if the weather is bright and the wind boisterous. Blinds should be got in readiness for use as soon as the sun's rays become more powerful; a little neglect in the matter of shading may spoil many foliage plants for a time. In arranging the plants, place the *Codiaeums* and *Caladiums* towards the front of the house, where the blinds need not be lowered quite to the eaves, these plants taking on finer tints when exposed to sunshine when re-established after repotting.

Souvenir de la Malmaison Carnations.—During the cold weather rather more fire-heat than is desirable had to be afforded, in order to maintain a temperature at 45° to 50°, with air afforded at all times. The earlier batch of plants of flowering age show signs of growth, and should have the growths regulated, and secured to a stick placed in the middle of the pot. Be careful with the use of water, more being applied when the weather becomes genial. Avoid wetting the leaves, and keep the floor of the house dry. Keep the air buoyant, and afford air at all times. The layers of last year should be potted in 7-inch pots, a compost consisting of turfy-loam three parts, leaf-soil one part, besides some sand, broken charcoal, and lime-rubble. The drainage should be efficient, and pot firmly with the hands only. Place the plants in a cold frame, which should be kept close for a few days, shading it if required. After the lapse of a week, apply water plentifully once, and subsequently only when the soil gets dry.

FRUITS UNDER GLASS.

By MALCOLM MCINTYRE, Gardener to Sir CHAS. TENNANT, The Glen, Innerleithen, Peeblesshire.

Peaches and *Nectarines*.—In the earliest houses, the disbudding of the trees will be now carried out at short intervals of time, not doing too much to a tree at any one time. The mild weather having favoured the first swelling of the fruit, stoning will soon follow, and the tying-in of the shoots, and thinning of the fruit, should receive careful attention. At the final thinning, rather more than the necessary quantity of one fruit to every square foot of trellis should be left, to make sure of having a good crop. The trees should be syringed with rain-water twice a day, and from both sides of the trees. As a partial check on trees making very vigorous growth, the fruits may be left a little closer together than as above advised, but do not tax their energies severely. Usually too many *Nectarines* are left on a tree as compared with *Peaches*, which accounts for them being of a small size. Vigorous trees are very uncertain in stoning, being prone to rush into growth, with the result that the fruit drops. There are two remedies for this: root-pruning, and lifting. The latter is, I think, the better, as it concentrates the vital forces on reproduction. Should brown scale make its appearance, syringe the affected trees with a mixture of soft-soap 2 oz., to warm water 1 gallon. Green-fly is sure to infest the young shoots, and the best insecticide is the XL-All vaporiser, which causes no injury to the tenderest leaves or flowers. Thrips are destroyed by the same dose of XL-All vapour. Take care that the soil low down does not become dry, the surface of the border often appearing wet while below it is unwholesomely dry. Examine the border occasionally, and whenever necessary afford clear water copiously, or to weakly trees diluted liquid-manure instead. Should mildew appear, apply flowers-of-sulphur 3 oz., made into a thin paste, and add $\frac{1}{2}$ pint of the mixture to 2 gallons of water.

and with this syringe the affected parts, allowing it to remain on the leaves for three days, when it may be washed off with rain-water applied with a syringe.

Strawberries.—These plants now require much care, for if several batches are in various stages of growth, they must have almost daily attention. Those swelling off their fruits may be subjected to rather strong heat, and this, if coupled with a free use of mild liquid-manure, will swell the fruit to their fullest size. As soon as they are half-coloured, remove them to a cool dry house, or to some shelves near to the roof-glass, and afford no more liquid-manure, and rather less water than hitherto. This kind of treatment will improve the colour and flavour, which will be almost equal to that of fruit grown out-of-doors. Continue to fertilise the flowers on successional batches of the plants, the most attention being paid to the first flowers on the trusses, these generally producing the finest fruits. Thin the fruit to six in number as soon as set; pick off all runners that make their appearance, and do not allow a plant to become dry at the roots. Forced Strawberries are apt to be infested by red-spider and green-fly, and as remedies overhead syringing and good attention generally in the matter of applying water are the best preventives of the former, and a slight fumigation with XL-All will destroy the latter. Fruit which is nearly or quite ripe must not be subjected to the vapour of XL-All, as the vapour does, to a certain extent, spoil the flavour of all fruits that hang on the sides of the pots. The fruit should be kept clear of the soil and of the pots with small crutches made from the twigs of Birch and Hazel; and if the trusses are raised to an oblique position, there is not much risk of cracking or breaking the fruit-stalks. Some gardeners use saucers under the pots with decayed manure at the bottom, which undoubtedly is a saving of labour in affording water, and there is no objectionable drip to contend with; but the practice is inimical to fruit of the finest quality, the soil becoming saturated with moisture, and the result is poor flavoured fruit. The best substitutes for saucers are small squares of thin turf, the grassy-side downwards. The pots being set on these, the plants quickly put forth roots into the turf, and thus obtain additional nutriment food-supply. On shelves that are hot and dry, these turves reduce the labour of affording water considerably, and are of benefit to the plants.

THE FLOWER GARDEN.

By T. H. SLADE, Gardener to Lord POLTMORE, Poltmore Park, Exeter.

Hardy Annuals.—Seeds may now be sown in the mixed and herbaceous borders, on soil which has been deeply dug and slightly manured, giving it a good tilth. As a cover of various depths from a sprinkling to half an inch of refuse soil from the potting-shed should be prepared, which will ensure the seed being better covered than would be the case with the soil of the border. It is advisable on ground where Mignonette will be sown to dig in some lime or old plaster, mortar rubble, &c.; and this sweet scented annual, being much called for, should be sown in quantity on a border to itself in the kitchen garden if no other equally suitable can be found for it. The Giant Pyramidal Crimson is a very good variety for cutting. Lime should also be worked into the places where seeds of Sweet Sultan will be sown, unless lime in some quantity exists in the soil. Suitable annuals for a mixed border are Godetia, Clarkia, Collinsia, Coreopsis, Calendula, Nemophila, Tropæolum, Lupin, Larkspur, Salpiglossis, and Scabious. There are many others that may be grown according to the requirements of the place. It is a good plan to sow a few occasionally during the season, in order to maintain the display as long as may be. Sow the taller species on parts of the border farthest from the beholder, if this is seen from one side only, or in the middle if seen from both sides, and sow the seeds of dwarf plants towards the front, a few clumps of the tall species being sown throughout the central part of the border, which will have the effect of relieving the monotony of the effect. Cover the more minute seeds very lightly, and the larger ones more or less, in accordance with their sizes.

Half-hardy Annuals.—These, if for planting in beds and borders, should be sown thinly in boxes or pans, and placed in a hot-bed frame. The seeds will soon germinate, and care must be taken to

afford ventilation as soon as that occurs, or damping-off will be sure to take place. If a frame be not at command, the seeds may be put into a light house, with a tile, slate, or bit of glass over them till the seeds shoot. Petunias of the grandiflora superb striped sections are excellent bedding plants, and Lord Courtney is a good rose-coloured self. Phlox Drummondii, Zinnias, Perilla, Antirrhinums, Daturas, Stocks, and a few Asters should be sown in top heat of 55° to 60°, and admit plenty of air on all favourable occasions when the seedlings are up. If more heat than that named be afforded, it will make the plants tender and drawn.

Bedding Pelargoniums.—The potting of these plants from store pots and boxes should now be hastened, the plants being placed, when potted, in a forcing or other moderately warm house. Zonal Pelargoniums which have been in flower up to the present time, if they are rested for a short space of time, and the tops of the longer shoots taken off, will form good plants for planting thinly in large beds or filling vases. Such plants soon make a display after being planted out.

Celosias.—The plants of the first sowing for bedding-out purposes, being now large enough, may be potted off, using a medium light soil at this stage, and placing them on a shelf near the glass in a stove. A month later, shift them into 5-inch pots, and keep them growing slowly.

THE HARDY FRUIT GARDEN.

By C. HERRIN.

Vine-pruning.—This operation should not be longer delayed, otherwise "bleeding" may occur. In the warmer parts of the country, ripe Grapes may be produced annually with a tolerable certainty, provided the proper cultural methods are carried out. These consist of making a good loamy border, well drained, and thrown up to the sun; pruning, disbudding, reduction of the number of bunches, thinning of the berries, and suitable manipulation of the summer growth. A good method of training an out-of-doors Vine is to take a shoot to the right-hand and one to the left-hand from the centre of the space to be filled, horizontally about 1 foot above the ground, and from these shoots let canes ascend vertically at 3 feet apart; and prune the lateral shoots to one or two good buds, and shorten the leading shoots from 2 to 3 feet, till the limit of space is reached. Young growths should be encouraged to grow from the bottom of the Vine, when the first laid-in ones are becoming aged, and their spurs unduly long, the young canes taking the place of the worn-out branches. Whatever method of training is adopted, overcrowding must be avoided. In favourable seasons, Grapes ripen in the Marquis of Bute's vineyard at Castle Coch, near Cardiff; and last autumn samples of Grapes were placed before the Fruit Committee of the Royal Horticultural Society, which were of excellent flavour. Reine Olga, a modern variety, with berries of a fair size of a dull red colour, has also been frequently exhibited in good condition, the flavour of which is excellent. The old Sweetwater and Parsley-leaved varieties are the best white Grapes for out-of-doors cultivation. They have rather a thin skin, and are sweet and refreshing. If the berries are thinned, and other cultural conditions carried out, the Sweetwater Grapes seldom fail to ripen. Several Vines of this variety that I have known for at least twenty-five years past, have during that time never failed to ripen a satisfactory crop. These Vines are trained fan-shaped, similarly to a Pear or Plum, some young wood is retained annually, and aged canes are removed.

The Fruit Room.—Most reputedly late Pears are now past their best. The ripening of Pears has been very erratic this season; and in that respect it resembled the past two or three years. Josephine de Malines was fully ripe early in the new year, although classed in catalogues as a February to April Pear; Verulam, an old stewing variety, was recently shown in a ripe condition, and, although gritty, it would on an emergency have been thought good enough for dessert. Beurré Rance is still in use, but the fruits are very poor in quality. Apples are keeping better than Pears, and as showing what may be done in keeping fruits, where the fruit room is a suitable one, was clearly demonstrated at a recent meeting of the Royal Horticultural Society, when many varieties, including Cox's Orange Pippin, were staged in excellent condition. Dryness

of the atmosphere in the fruit room causes Apples to shrivel very quickly, and an earthen floor is better than anything else; this, together with a thick thatched roof of straw makes a good storage place for Apples, Pears, Nuts, &c. The temperature of a fruit room should be kept at about 40° Fahr. The fruit should be examined at least once a fortnight, and any decaying or spotted fruit removed. Sound fruits should be handled tenderly now, as well as at other times.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bicton East Budleigh, Devonshire.

The Turnip.—A moderate quantity of seed may be sown on a border facing south, in drills drawn 2 inches deep and 1 foot apart. The best variety for this early sowing is Extra Early Milan, and another sowing may be made on a warm site of Early Snowball in about fourteen days. It is advisable to sow Turnip seed frequently in small quantities till the month of July, the root soon getting stringy in the summer months. Let the plants be thinned early, and afforded water copiously in dry weather.

Peas.—Make a sowing of some main crop variety in drills from 4 to 6 feet apart, a line of Spinach being sown between the rows when these are 6 feet apart. Doubtless, better crops of Peas are obtained from rows standing 12 to 15 feet apart, the intervening space being cropped with early Potatoes, Turnips, or Cauliflowers. Peas started in pots or boxes, should be fully hardened off before being planted, in about a fortnight from the present time. When planted, put stakes to them forthwith, and a few evergreen boughs if cold winds prevail. The rows after planting should be closely moulded up.

Beans.—Sow Green or Broad Windsor for a succession to the earlier sowings, dibbling in the seed at 6 inches apart in double rows, the latter being 3 feet apart. Beans sown in boxes under glass should be afforded the same kind of treatment as that advised for Peas, but in lieu of stakes draw the soil into a ridge 4 inches high, in order to shelter them from the wind for a time. Later crops may be similarly treated.

Celery.—Sow seeds for the main crop in pans or cutting-boxes filled with light soil made fairly firm, sowing thinly, and covering lightly. Place the seed in gentle warmth, and cover the soil with sheets of glass till germination has taken place, when uncover, and remove to cooler quarters, keeping them well up to the roof-glass. Another sowing may be made in a cold frame three weeks later.

Brussels Sprouts.—If seed was not sown early in February under glass, a sowing may now be made on a warm border, pricking out the plants at a distance of 4 inches apart as soon as they possess a pair of true leaves. For a late crop, sow in the first week in April.

Leeks.—Sow seed in drills drawn 9 inches apart, and gradually harden off those which were sown under glasses, and plant out next month.

Capsicums.—Sow in pans on mild bottom-heat; pot off singly when fit, and eventually get them into 6 or 7-inch pots; keep in a temperature of 55° to 60°, and keep them near the glass. In Devon we plant out Capsicums early in the month of June, on a south border, and afford them a space of 1½ foot from plant to plant.

"**AGRICULTURAL ECONOMIST.**"—The Countess of WARWICK, in the March number of the *Agricultural Economist*, appeals for support for her new project for developing the work of rural education. The suggestion to organise annual reunions of all the friends of agricultural and horticultural education, and at the same time to hold an exhibition of produce from the farms and gardens attached to the various educational institutions devoted to the technical training of farmers and gardeners, is full of promise for the future of rural England. Lady WARWICK has secured the hearty co-operation of Mr. EDWARD OWEN GREENING, founder of the "One and All" organisation, which has in recent years met with so much success in encouraging a love of gardening among the industrial classes, and it is proposed that the first educational flower show should be held in connection with the annual great "One and All" flower show in August next at the Crystal Palace.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Illustrations. The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Newspapers. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, MAR. 11 { Annual Meeting of the United Horticultural Benevolent and Provident Society.
TUESDAY, MAR. 12 { Royal Horticultural Society Committees meet at Drill Hall.

SALES.

MONDAY NEXT.—Rose Trees, Fruit Trees, Begonias, Lilies, Perennials, Border Plants, &c., at Protheroe & Morris' Rooms.

WEDNESDAY NEXT.—Standard, Half-Standard Dwarf Roses, Dahlias, Lilies, Begonias, Carnations, Perennials, Phlox, Gladiolus, Azaleas, Palms, &c., at Protheroe & Morris' Rooms.—Roses, Shrubs, Border Plants, Lilliums, &c., at Stevens' Rooms.

FRIDAY NEXT.—Healthy Established Orchids, consignment of Cattleya Mossiae, at Protheroe & Morris' Rooms.

FRIDAY NEXT.—Sale of well-grown Nursery Stock at the Nurseries, Feltham, by order of Messrs. C. Lee & Son, by Protheroe & Morris, at 12 o'clock.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—42° 2'.

A TUAL TEMPERATURES:—

LONDON.—March 6 (6 P.M.): Max. 48°; Min. 42°.

March 7.—Stormy, with fine intervals.

PROVINCES.—March 6 (6 P.M.): Max. 46°, S.W. Ireland: Min., 41°, Shetlands.

The Timber Supply and our Forests.

DR. SCHLICH is rendering excellent service in his attempts to drive home the imperative necessity of "conserving" the forests of the Empire. He can bring forward an excellent object-lesson in the Indian Forest Department, to whose success he himself has so largely contributed. When we learn on the one hand that our supplies from abroad are rapidly diminishing, and that the cost of timber is steadily rising, and on the other that there are twenty-five millions of acres in Great Britain and Ireland producing only a nominal rental, it is surely more than time to see to it; that the £25,000,000 expended annually in importing timber from abroad should be, in great part at least, devoted to the formation and maintenance of forests on otherwise waste land. Full statistical details are given in Dr. SCHLICH's paper published in the *Journal of the Society of Arts* of March 1, 1901, from which we take the following condensed extracts:—

"With all the forest wealth of our colonies we import [from foreign countries] now every year timber valued at close on £18,000,000, and the sun has lately risen at the rate of £771,000 annually. Surely the time has come, or rather it came some time ago, for a more vigorous forest policy on sensible lines throughout the empire. Let us strive to introduce systematic forest management, more particularly into Canada and Australasia. Above all, let the self-governing colonies consider a little more seriously the magnificent example which has been set to them by India, where the preservation of the State forests has now been put on a safe basis for the everlasting benefit of the people of the country and the Indian exchequer.

"But should we not begin by setting our house at home in order before we go and preach abroad? The imports into the United Kingdom in 1899 are valued at £25,000,000, and they have increased of late years at the rate of 332,000 tons, valued at £919,000 annually.

"The price of timber is steadily, though slowly, rising, and 87 per cent. of the total imports consists of Pine and Fir-timber, the sources of which are specially exposed to exhaustion. Whence are we to obtain the 9,000,000 or 10,000,000 tons of

Coniferous timber, when the countries round the Baltic, and perhaps also Canada, have commenced to fail us? These are the timbers which form the very staff of life of our building trade, and a deficiency of supply in this direction must have the most serious effect upon the population of these islands. And all the time we have sufficient, and more, surplus land at home to produce all this timber without putting a single acre out of cultivation. There are 12,000,000 acres of waste land and 13,000,000 acres of mountain and heath land to choose from the necessary 6,000,000 or 7,000,000 acres. Surely £25,000,000 going out of the country every year is money enough to take some trouble about. Only a few weeks ago the *Times* drew special attention to the fact that our imports greatly exceeded the exports, a circumstance which fills a good many people with misgivings. And here is an item valued at £25,000,000, which could be produced at home, going begging.

"I do not want to touch a single acre of the existing woods (though they could be so managed as to give a revenue, without interfering with shooting, &c.), let them continue to serve as game preserves and adornments of the landscape. What I do urge, is the creation of additional woods on surplus lands to be managed on economic principles, for the production of timber and other forest produce. People must learn that successful forestry must be based on research, at least, as much as agriculture.

"Efforts have been made towards giving instruction in forestry at Edinburgh; but what we require is at least one well-equipped forestry faculty at a university, such equipment to include a suitable practical training ground. In addition, sylvi-cultural schools are wanted, where men of less pretensions may be educated to fill the posts of foresters on private estates of limited extent. Such a school has been started in connection with the Royal Botanic Garden at Edinburgh, and it would not be a difficult task to develop it, and to start others in England and Ireland. I believe that landed proprietors would pick up the men trained at such schools to carry out the plans which experts have prepared for them. It gives me real pleasure to state here that plans of operation (or working plans, as foresters call them), which I prepared three years ago for the Duke of Bedford's forests in Devonshire and at Woburn, are being followed and carried out by intelligent foresters. Once a year I visit each locality, check the work of the past twelve months, and indicate what should be done in the ensuing year. The effects of such operations are naturally slow in showing, but I am satisfied that they will lead to a considerable improvement in the yield capacity of these forest estates. As in agriculture proper, so in forestry, His Grace is leading the way, which other proprietors will do well to follow.

"The difficulty about extended afforestation in the United Kingdom lies in the fact that the waste lands available for planting are almost entirely private property, and that most of the proprietors are either unwilling or unable to invest money in an undertaking which will commence giving a return only after the lapse of a series of years. They prefer a present small rent from shooting to an increased income from forests hereafter. It is indeed easy to show, that millions of acres, which now yield a grazing revenue of a few pence an acre, or shooting rents of perhaps eighteenpence a year, could be made to yield a net revenue, after allowing compound interest for all outlay, of 10s. and more, if put under forest in a sensible and economic manner. With a view to inducing owners to plant, Government might help in various ways. Advances for the purpose might be given, to be recovered in the shape of a sinking fund; afforested lands might be exempt from taxation for a number of years, that is to say, until the first thinnings commence. In other words, forests should be taxed according to the income which they yield, and not according to the area which they occupy. In other cases, as in the congested

districts of Ireland, and probably also in Scotland and Wales, if not in England, surplus lands might be acquired by the State and put under forest. Under the existing land laws, the Congested Districts Board of Ireland purchases estates. After settling all unoccupied parts with the tenants, considerable areas of waste land remain over, which should be converted into State forests. There are at least 2,000,000 acres of such land available in Ireland, and still larger areas in Scotland, not to speak of Wales and even England. By afforestation, additional labour would be required in rural districts, and help to reduce the eagerness with which the younger part of the rural population now flock into the great cities, where only too many are destined to swell the large army of the unemployed."

A CACTUS-HOUSE (see Supplementary Illustration).—We owe to the courtesy of CHARLES DARRAH, Esq., Holly Point, Heaton Mersey (gr., Mr. ARTHUR COBBOLD), the opportunity of illustrating a group of Cacti, planted out among limestone rocks, in one of seven houses devoted to the culture of these plants. The solidity and stateliness of the plants are well brought out, whilst students of what is now called "Ecology" have an excellent object-lesson, showing how well adapted the plants are to resist drought by their fleshy substance and thick rinds, and to deter marauders by their formidable spines. In the two corners of the foreground are plants of *Echinocactus cylindraceus*, below these are two small plants of *Opuntia ursina*. In the centre are three plants of *Cereus giganteus*, with another of the same species behind, measuring 8 feet 6 inches in height. To the right of this is *Echinocactus Emoryi*, showing four or five seed-vessels with the dried-up flowers adhering to them; in front of this, *E. Wislizeni*, but there is a larger plant of the same species between two specimens of *Cereus*. The dwarfier-growing plant near the centre of the group is *Mammillaria nogalensis*.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees will be held on Tuesday, March 12, in the Drill Hall, Buckingham Gate, Westminster, when the afternoon lecture will be upon "Climbers for Pergolas, Verandahs, and Walls," by Mr. G. DAVISON.

THE SALE OF POISONS.—At the Inverness Chamber of Commerce lately, it was stated that the opinion of the Lord-Advocate, Mr. GRAHAM MURRAY, K.C., was that where poisonous substances were to be dealt with in the way of being dispensed pharmaceutically, it was quite right that the retailing should be done by properly qualified persons. With regard to preparations such as sheep dips, insecticides, weed-killers, &c., poisons which might be dispensed and were supplied by the manufacturer in the final form in which they were to be applied, the Lord-Advocate did not think that any trade or profession should have a monopoly of selling for profit, if proper precautions be taken that such goods would not be applied and used for any other purpose than that for which they were made. Mr. JAMES A. GOSSIP, of Messrs. HOWDEN & Co., nurserymen, characterised the working of the Act as most troublesome. It was most vexatious to find that if orders were got for goods containing poisons in large or in small doses, such orders were to be diverted from the natural channel of supply. By all means let chemists sell such goods if they pleased. Again, this class of article was made up in sealed receptacles which were never tampered with, and reached the consumer as they had been manufactured. As business men dealing in certain classes of articles, they felt that these restrictions were a great hardship.

GLASGOW INTERNATIONAL EXHIBITION, 1901.—In connection with the International Exhibition which will be opened in Glasgow in May, two horticultural displays will take place in the autumn. The first will be composed of pot plants,

cut flowers, &c., on August 28 and 29; and the second offruits and vegetables on September 4 and 5. Every means are being taken to make these exhibitions as international as possible, and the arrangements are in the hands of a joint committee in association with the Glasgow and West of Scotland Horticultural Society. The horticultural shows will be held in the precincts of the International Exhibition in Kelvingrove Park. The schedule of prizes that will be offered for competition includes cash, trophies, &c., to the value of £1000, and our Scottish friends hope and believe they will obtain such displays of horticulture as have not been seen in Scotland since the last International Exhibition. In connection with the fruit show, the executive of the Glasgow International Exhibition invite "foreign nations, states and dependencies of Great Britain, and all whom it may concern, to furnish displays of their fruit products." Then we are told that "the importance of such a display cannot be over-estimated, as in addition to interesting the general public, the fruit will be brought directly under the notice of very large buyers, with every prospect of finding a profitable place in a permanent market." Arrangements have been made with the Scottish Cold Storage and Ice Company, Limited, for the reception of exhibits that may require storage of this kind. The schedule for the exhibition of plants and cut flowers includes seventy-one classes, and calls for a great variety of exhibits, though we do not observe any features in it that may be considered quite novel. The first class is one for the usual group of miscellaneous plants, which will be arranged upon a space of 30 feet by 10 feet. This is an open class, and a sum of £40 is offered in prizes. Then follows another group of plants of a similar character, but to cover only a circular space of 10 feet in diameter, the competition being confined to gardeners and amateurs. The first prize in this case will consist of a Veitch Memorial Medal and £5, presented by the trustees of the Veitch Memorial Fund. For a collection of twelve stove and greenhouse plants, and one of six plants, very liberal prizes are offered; and there are classes for collections of eighteen, twelve, and six plants in best condition for the decoration of the dinner-table. Among the classes intended to furnish good displays of particular plants, there are some for exotic and British Ferns, *Nepenthes*, early-flowering *Chrysanthemums*, *Cordylines* (*Dracenas*), *Codiaeums* (*Crotons*), *Orchids*, *Begonias*, *Fuchsias*, *Pelargoniums*, *Ericas*, *Lilies*, and *Palms*. In the cut flower section there are two classes for displays of made-up flowers, the first for "the best exhibit of, and greatest variety in floral designs upon a space of 8 feet by 6 feet;" and the second for a collection of six bouquets and six baskets of cut flowers. There are classes for *Gladiolus*, *Roses*, *Dahlias*, *Carnations*, *Picotees*, "hardy herbaceous" Sweet Peas, *Pansies*, *Asters*, *Pentstemons*, *Marigolds*, *Phloxes*, and annuals. In the schedule for the fruit show the largest class will be that for the best exhibit of fruit, to occupy a space of 12 feet by 6 feet. There is a peculiar regulation respecting exhibits in this class, which says that the fruit need not necessarily be grown by the exhibitor. The only recommendation that can be urged in favour of such a step, is that it will certainly tend to increase the number of entries. Very liberal prizes are offered for collections of twelve and eight dishes of fruits, and for a collection of twelve dishes of hardy fruits. There are many competitive classes for Grapes, and there will be sure to be a good display. In a class for eight bunches, the sum of £20 is offered in three prizes. Separate classes have been arranged for such varieties of Grapes as Muscat of Alexandria, Black Hamburg, Alicante, Mrs. Pince, Gros Colmar, Lady Downes, and Madresfield Court. Melons, Peaches, Nectarines, Apricots, Plums, Pears, and Apples will be shown; and there are fifteen classes for vegetables. The Secretary is Mr. HUGH M. MACKIE, 55, Bath Street, Glasgow, to whom all enquiries and entries should be addressed.

NATIONAL ROSE SOCIETY.—The General Purposes Committee will meet in the club room of the Horticultural Club, Windsor Hotel, Victoria, W., on Tuesday, March 12, at 11.30. A meeting of the General Committee will be held on the same day at the same place at 3 P.M.

—The Honorary Secretaries have much pleasure in announcing that her Majesty Queen ALEXANDRA has consented to continue to be the Patroness of the Society, a post which she for many years held as Princess of Wales.

THE UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY will hold its annual meeting on Monday next, March 11, at the Caledonian Hotel, Adelphi, Strand, to commence at 8 o'clock P.M. Mr. W. ROUPPELL will preside.

HORTICULTURAL CLUB—The usual monthly dinner and conversazione will take place on Tuesday, March 12, at 6 P.M. The subject for discussion will be "The Principles and Practice of Wild Gardening," to be opened by Mr. H. SELFE-LEONARD.

A PROPOSED NATIONAL SWEET PEA SOCIETY.

—A meeting will be held at Winchester House, Old Broad Street, E.C., Room 21, on Tuesday, March 12, at 5.30 P.M., with the view of forming a National Sweet Pea Society. The chair will be taken by N. N. SHERWOOD, Esq. Anyone interested, but unable to attend, should communicate with the hon. sec. (*pro tem.*), C. E. WILKINS, 19, Lyndhurst Road, London, S.E.

FLOWERS IN SEASON.—The Chinese Primrose is distinctly in season just now, and we are reminded of the fact by Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea, who send us some pretty blooms taken from plants now under cultivation for seed purposes. One of the largest and best of these varieties is named "Queen." It is pink-coloured, with yellow eye, and the blooms are large and much frilled. Market White is a flower of similar character except in point of colour, and the eye is green instead of yellow. There is another distinction also, for Queen has all the petals united together from the base one-half their length, and the flowers are thus more cup-like. Ruby Queen is much less in size, but of deep crimson colour, with small greenish-yellow eye. Rose Queen is similar to Market White, but is of a rich pink colour. Gigantic Salmon, like Queen, is semi-gamopetalous, of very large size; and Market Red, a rather flat, prettily frimbriated flower of good colour and size. Improved Blue leads one to wonder what the blue was like before it was "improved!" but so far as *Primulas* go, it is as good as yet obtained. *Primula* Blue is generally a shade of purple. Some semi-double varieties are extremely pretty in red, pink, crimson, and rose colours. A few flowers of varieties of the "stellata" strain, showing just a wedge-like notch in the centre of each petal, are not so pretty as single blooms as when seen upon an elegant, branching inflorescence.

HYBRID WATER LILIES.—"About the year 1879," says M. LATOUR-MARLIAC, "I commenced the work in earnest by crossing the finest types of hardy and tropical *Nymphaeas* which I had in cultivation here. These early attempts were at first negative in their results, but soon afterwards I scored an unexpected success in obtaining a hybrid with deep red flowers, the seed-parent of which was *Nymphaea pygmaea alba*, fertilised with pollen from the flowers of *N. rubra indica*. Unfortunately, and to my great disappointment, this magnificent specimen proved hopelessly barren. In order to obtain plants of a really ornamental character, I considered that it was especially necessary that I should make it a point not to employ as seed-parents any subjects except such as were very free-flowering, and by rigorously adhering to this principle, I succeeded, little by little, by means of numerous sowings and strict selections, in raising types which were in every way improved in the form and other

characteristics of their flowers. It was thus that one of these new subjects (*N. alba*), fertilised with the pollen from the American species, *N. flava*, produced *N. Marliacea chromatella*, which has achieved such a high reputation. In the following year I obtained the hybrid *N. odorata sulphurea* from a similar crossing of *N. odorata alba* with *N. flava*, and the last-named species has also been the pollen-parent of *N. pygmaea Helvola*. About the same time two species bearing a high character made their first appearance in gardens, viz., *N. sphaerocarpa*, a native of Sweden, and the elegant *N. odorata rubra*, found at Cape Cod, in North America. The sparse-flowering character of *N. sphaerocarpa* determined me to reject it for hybridising purposes, and I gave all my attention to the fascinating American species, *N. odorata rubra*, which, employed as the pollen-parent, with my choicest specimen of *N. alba* as seed-parent, rewarded me with the sweet *N. Marliacea rosea* and *N. Marliacea carnea*. *N. odorata rubra* was subsequently the parent of the beautiful *N. odorata exquisita*, the colour of which is pink approaching to carmine. As the last-raised specimen of this first group of my hardy hybrid *Nymphaeas*, I must mention the remarkable *M. Marliacea albidia*, the flowers of which have not yet been surpassed in size by those of any other *Nymphaea*. Condensed from the "Garden," February 9.

WEATHER LORE FOR MARCH.—"March comes in like a lion, and goes out like a lamb."

"A peck of March dust is worth a king's ransom."

"March flowers

Make no summer bowers."

"A windy March and a rainy April make a beautiful May."

"So many mists in March you see,

So many frosts in May will be."

"March comes in with adders' heads, and goes out with peacocks' tails." J. C.

ROBERT BROWN.—A memorial bust of Dr. ROBERT BROWN, a distinguished student of Marischal College, Aberdeen, of a century ago, and a botanist that subsequently gained for himself a world-wide reputation, was unveiled by Dr. JAMES W. H. TRAIL, Professor of Botany, Aberdeen University, in the Picture Gallery of Marischal College on Thursday afternoon, February 28, in presence of a large gathering of ladies and gentlemen. The bust, which is of marble, is a replica of a bronze bust erected on the house in Montrose in which Dr. BROWN was born: both are the work of Mr. D. W. STEVENSON, R.S.A., the well-known sculptor, and the gift of Miss HOPE PATON, Links House, Montrose, a cousin of the celebrated botanist. The pedestal bears the following inscription:—

ROBERT BROWN,

1773. D.C.L., LL.D., F.R.S. 1858.

Member of the Academy of France.

"Botanicorum Facile Princeps,"

Alex. Von Humboldt.

Alumnus of Marischal College

1787. and University. 1790.

Presented by Miss Hope Paton,
Montrose.

D. W. Stevenson, R.S.A., Sc.

We shall have pleasure in publishing Professor TRAIL'S speech, which he made on the above occasion, in next week's issue of the *Gardeners' Chronicle*.

A GOVERNMENT SEED-TESTING STATION.—The Departmental Committee appointed by the Board of Agriculture, and presided over by the Earl of ONSLOW, to enquire into the conditions under which agricultural seeds are at present sold, has now completed its report. The Committee conclude that, generally speaking, the seed trade in England is, on the whole, well conducted, and has of late years improved with the advance of science. Nevertheless, the majority of the Com-

mittee recommend that one central station should be provided in the United Kingdom for the purpose of testing the purity and germinating power of seeds sent to it for official examination. Two members of the Departmental Committee (Sir WILLIAM T. THISELTON-DYER and Mr. L. SUTTON) dissented from this opinion.

FRUIT FROM THE CAPE.—The steamer *Carisbrook Castle* arrived at Southampton on Sunday last with the under-noted packages of fruit:—Peaches, 454 boxes; Pears, 204; Plums, 206; Nectarines, 28; and Grapes, 5 boxes.

CROYDON GARDENERS AT DINNER.—On Wednesday week last, the members of the Croydon and District Horticultural Mutual Improvement Society met and dined together. The Society was formed about twelve months since, numbers considerably over 100 members, and on the above date they inaugurated what will doubtless prove to be a series of pleasant annual dinners. Every body of Englishmen banded together for a common purpose finds it necessary to dine in each others company at least once a year; and so the gardeners at Croydon are following a traditional usage, and they made their first event an absolute success. There was a good company, good dinner, and the tables were beautifully decorated with plants and flowers—as every gardener's table ought to be. Mr. STANLEY JAST, Chief Librarian at Croydon, presided, and proposed the toast of the evening, to which Mr. SIMPSON, Chairman of the Society, responded. Mr. ROFFEY, the Secretary of the Croydon Horticultural Society, was present, and said he could not tell why people should imagine that the Mutual Improvement Society was started in opposition to his. Both were established for educational purposes, and should work hand in hand. The Croydon Horticultural Society was now advertising its thirty-fourth show, and some of those already held had earned the reputation of being the best in England. He wished the Mutual Improvement Society every success. The arrangements for the dinner were largely carried out by Mr. GREGORY, Hon. Sec. of the new Society.

CULTURAL MEMORANDA.

CALADIUM MINUS ERUBESCENS.

FOR general decorative purposes either in the stove or the dwelling, this species of Caladium cannot be excelled, and in places where much indoor decoration is in vogue, the plant should be grown in quantity. If potted in small 60's, it forms a companion plant to the more delicate *C. argyrites*, while if repeatedly shifted into slightly larger pots, and the largest tubers selected, specimens 2 feet high and diameter may be grown, as useful in vases and in other ways. *C. minus erubescens* is one of the specialties of Mr. Kemp the gardener at Stoke Park, Slough, who uses it largely in domestic decoration. Half-decayed horse-dung rubbed through the meshes of a $\frac{1}{2}$ -inch sieve forms about one-half of the potting compost, the other half being made up of turfy loam and a small quantity of silver-sand. *C. H.*

PERENNIAL DELPHINIUMS AS ANNUALS.

It is not generally known that the popular Delphinium may be treated as an annual, and may be obtained in flower in succession batches from June till well into the autumn. The seed should have been saved from flowers of good varieties, and the first sowing made in heat at the beginning of the month of August. As soon as the plants are up, remove them to a cooler frame or house, otherwise they will damp off. In a month or six weeks prick them off into a frame or into boxes in a rich soil, and when established expose them to the air and light, so as to ensure sturdy growth, and in the middle of the month of October plant them in the open ground in heavily manured trenched soil.

If old plants exist in the garden these will be in

flower from May until July at the latest, according to the locality, and the young plants from the August sowings will succeed them. Another sowing made in the present month, and the seedlings set out in the month of May, will carry on the flowering period until the frosts come. The plants require much water in the summer, for if the soil be allowed to get dry, mildew will infest them and their beauty will vanish. After the first year the plants will all flower at the same season, hence the necessity of sowing as recommended to obtain the succession bloom.

Inferior varieties amongst the seedlings, if marked at the flowering time, may be transferred to the wild garden, as it is useless to grow varieties in the herbaceous border, when so many good ones may be obtained from a single sowing.

Some gardeners recommend cutting down the old plants after flowering, and watering well to encourage a second flowering in the same year, which is possible, but most unnatural, as the plants become weakened by such a process. Again, objection has been raised against the foliage of the old plants becoming unsightly after flowering, and having to be cut down, thus causing a void in the border for the rest of the season. This can be obviated by planting in August a March-raised seedling in front of the old one, which will give a succession the whole season through. In effect, what a lot of trouble! We take as much trouble with *Campanula pyramidalis*! why not with the Delphinium? *F. W. Smith.*

NURSERY NOTES.

MESSRS. JNO. LAING & SONS.

IN the cultivation of those species of plants that the late John Laing, V.M.H., worked so hard to improve and popularise, several important operations need to be carried out in the early spring months each year. The tuberous-rooted Begonias, for instance, the early history of which must always be largely associated with the name of Laing, are raised from seeds saved from selected plants during the previous season.

Already there are upwards of 20,000 seedlings pricked out, or in fit condition to be so treated, and successive sowings will be made until sufficient provision has been made for the requirements of the firm, which, we are informed, averages about 100,000 plants. That such a quantity can be disposed of by one firm is an illustration of the popularity these free-flowering Begonias have obtained since they have been commonly used in the adornment of the flower-beds out-of-doors, as well as for conservatory decoration.

The raising of seedling Begonias is a very simple matter, and there need be no failures of much account if ordinary attention be afforded them. When such a large stock has to be raised annually, it may strike one that there would be much saving of time effected if the seeds were sown very thinly, and the "pricking-off" process, and the consequent root-disturbance, dispensed with. But experience has proved the opposite to be true, for the tiny plants, however thinly they may be disposed, do not make nearly such quick growth whilst in the soil in which the seeds were sown as they do after transference to a fresh and sweeter compost. There is also an economy of space for a period after the sowing of the seeds.

Among a considerable number of fibrous-rooted species and winter-blooming Begonias suitable for cultivation in baskets, are several that deserve to be mentioned here. One of these is *B. Haageana*, figured in the *Gardeners' Chronicle*, November 24, 1894, p. 633, and under the name of *B. Scharffii* in the *Botanical Magazine*, 7028. It produces single white and pinkish flowers very freely during the winter. *B. undulata*, an older species from Brazil, is also a capital plant for cultivation in a basket.

A considerable number of young plants of the new *B. Caledonia*, the white form of *B. Gloire de*

Lorraine, has been raised from cuttings, and of *B. Gloire de Lorraine* from leaf-cuttings. All that is necessary, it appears, in the case of the last-mentioned variety, is to insert the leaf into a light compost upon a hot-bed, just covering the petiole, and keeping the lamina of the leaf free and upright. The new growth proceeds from the base of the petiole.

Caladiums are beginning to look pretty, but the tubers have not been hurried into growth very long, and only the first, very delicate-looking leaves have yet been made.

Amongst miscellaneous stove and greenhouse plants were noticed good collections of Cordylines, Codiaums, Ixoras, Acalyphas, Palms, &c. The Clivias have not yet commenced to bloom. In the Orchid-house there are some fine plants of *Phalaenopsis amabilis*, *P. Stuarti*, *P. Schilleriana*, &c.

Since Mr. Laing's death last year, at the age of 77 years, the business has been continued by his sons, Mr. John A. Laing and Mr. Jas. Henry Laing.

BOOK NOTICE.

GARDENS OLD AND NEW. (*Country Life* Office, 20, Tavistock Street, Covent Garden.)

ONE of the most attractive features of the journal known as *Country Life* consists in the views of gardens in various parts of the country. We have often had occasion to lament the general introduction of process blocks, but all process blocks are not such as those given by our contemporary. The present work consists of a selection of the views that have appeared in *Country Life*, and very beautiful and interesting they are. The gradations of tone and shadow, especially in the architectural representations, are admirable. The foliage is not so uniformly successful, being sometimes blotchy, and more or less out of focus.

Short descriptions of the several gardens are given, but solely from an æsthetic point of view, few or no details being given on the points of most interest to the practical gardener; or as to the plants, trees and shrubs, which are to the landscape-gardener what the pigments are to the artist. The artist and the garden architect, on the contrary, will revel in the beautiful harmonies between the architectural and the garden features, and if there are here and there some jarring notes, discords, and childish features, it must be remembered that both circumstances and tastes differ, and that a book of this character should be representative of all styles.

HOME CORRESPONDENCE.

IRIS HELDREICHI.—This is the established name, according to the law of priority, of the lovely Iris that last year received honours from the Royal Horticultural Society under the name of *I. stenophylla*, when shown at the Drill Hill by Messrs. Wallace & Co. At that time it was not known that the plant had been described under the above name, hence the adoption of a synonym. The alteration of the name is, however, of little moment. It is more to the point to see this beautiful Iris figuring freely in several collections of hardy plants at the last meeting of the Royal Horticultural Society, and to know that it is likely to prove an acquisition. The plant differs from others of its class, in the pale violet-blue tint of its flowers, and in its remarkable vigorous growth. The gardener should make a note of the fact, that this species is an excellent subject for forcing in pots. *J.*

APPLE COX'S ORANGE PIPPIN.—Amongst the exhibits placed before the Royal Horticultural Society's Fruit Committee at the meeting on February 26 was a dish of fine fruits of Cox's Orange Pippin, brought by the Rev. W. Wilks from his garden at Shirley, near Croydon. As these were not entered, naturally they obtained no mention in the gardening papers. It was almost cruel towards late Apples to bring such delicious fruits as these were to the table as they were, though the season for them was so late; yet so much superior to any other variety shown on

that occasion. They showed that this variety can be kept till the end of the month of February in fine condition. The next best Apple in point of flavour no doubt was the excellent Scarlet Nonpareil that Mr. Crump, gr. at Madresfield Court, had sent up from out of his subterranean fruit-room; the sample was so fresh, solid, and juicy. As this fine late variety has been with us nearly 100 years, and is yet one of the very best late dessert Apples, the bestowal of an Award of Merit on it comes as a belated honour. *A. D.*

APPLE BARNACK BEAUTY.—The recent comments on this excellent Apple, and the remarks upon its origin by "H. J. C." (p. 144), reminds me that on one of my visits to Burghley, about twenty years ago, the late Mr. R. Gilbert spoke to me in high terms of the merits of this Apple, and stated that, after more than one attempt to get the Royal

they are gathered from the tree, and be carefully handled. The fruit-room must be cool, with a regular, equable temperature, and not so dry as to cause premature shrivelling, and it must be inaccessible to frost. It is not an uncommon thing for really fine specimens of different varieties to be placed before the Fruit Committee at the Drill Hall, which, on being tested, are found very disappointing; and in some cases this is due to the fruits having been laid on mouldy hay or straw. *H. Markham, Wrotham Park, Barnet.*

LATE CULINARY APPLES.—In some gardens early Apples are in excess of the demand, and trees of different varieties may not be good croppers, from reasons of climate and soil, which it is good policy to head back at this season, and graft with late keepers. The scions, consisting of medium-sized well-ripened shoots, should be laid in on the north side of a wall

Kew and back is for me nearly half a day's journey. No doubt the authorities have their reasons for the proposed change, and if they have already determined to make it, possibly nothing will induce them to alter their decision; but it would be rather interesting to hear the opinions of some of your readers upon the advisability, or otherwise, of the proposed change. I do hope that some means may be found by which at least a portion of the herbaria may be retained at South Kensington. I can go there occasionally, but have not many opportunities of going to Kew, and I have no doubt many others are situated as myself; and it is for this reason that I have ventured to address you on this subject. *T. N. Cox.*

GALANTHUS ELWESII VAR. ROBUSTUS.—A distinct form introduced to cultivation from Asia Minor about ten years ago, and, I believe, cata-

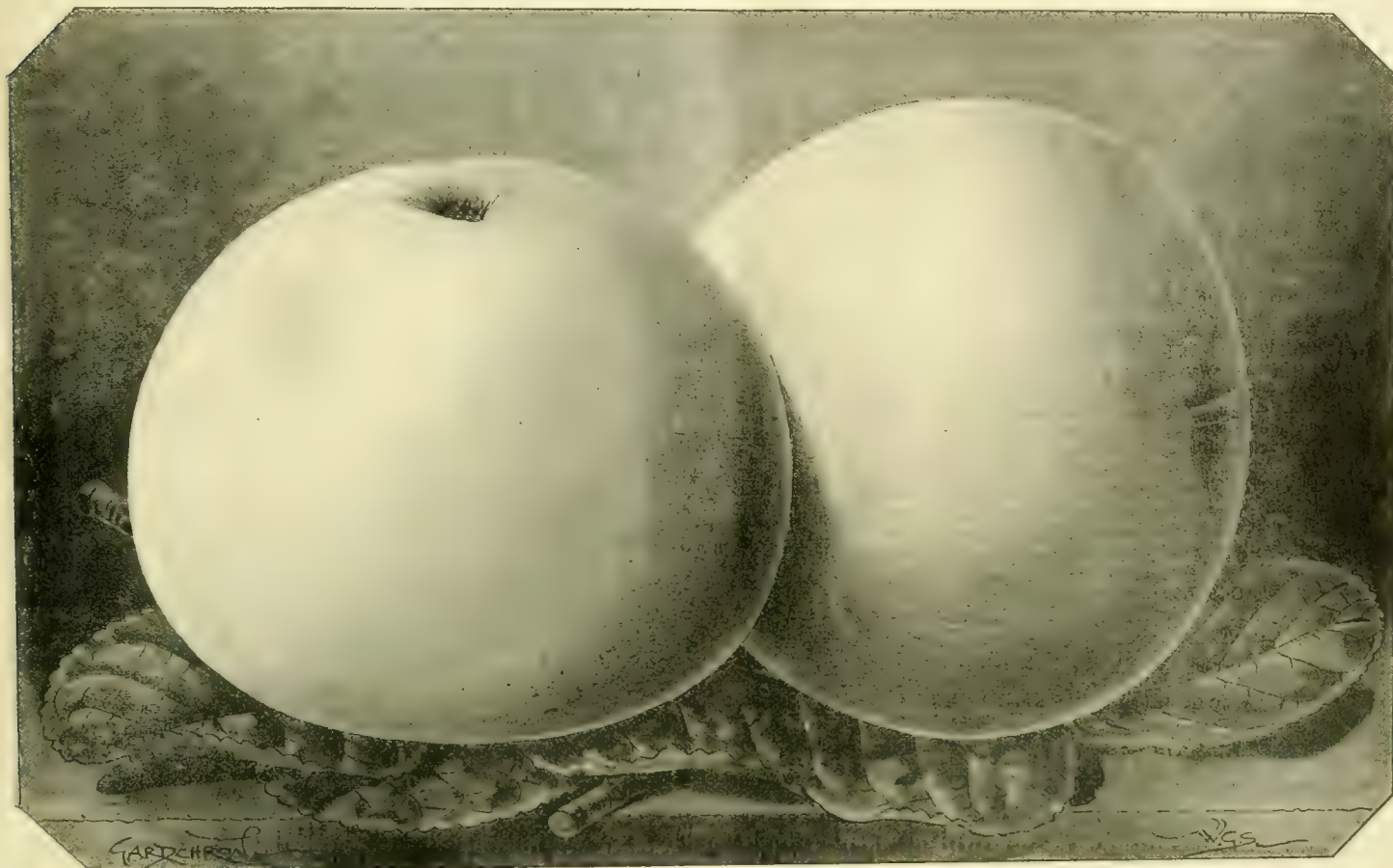


FIG. 64.—APPLE "DIAMOND JUBILEE."

(Exhibited at the Meeting of the Royal Horticultural Society on February 23, 1901, by Mr. A. J. Thomas. See description on p. 147, *Gardeners' Chronicle*, March 2, 1901.)

Horticultural Society to officially recognise its undoubted qualities, he had failed; but added that nevertheless it was a splendid late Apple, and would some day be appreciated. This forecast of his is being gradually fulfilled. As regards its origin, I understood him to say (if my memory is not at fault in this detail) that it was raised by a schoolmaster named Barnack, at a neighbouring village to Burghley. I have still a tree which he then sent me, and it is doing well in a particularly unsuitable soil for Apples in general. It is a sure cropper, the fruits possess good keeping qualities, and perhaps are better adapted for kitchen use than for dessert. *J. R., N. Wales.*

APPLES.—I was glad to observe Mr. Mayne's remarks in last week's issue (p. 144) with reference to that fine late dessert Apple Scarlet Nonpareil. At Wrotham the trees succeed as a standard and as a bush, and the flavour of the fruit is very good indeed, more especially when it is of a high colour. The fruit has kept in good condition up to the present time here. Apples to keep in the best of condition till the spring must be quite ripe when

till grafting time arrives. See that they are laid thinly on the earth and not in bundles. An important matter in gathering and storing late varieties of the Apple is to let the fruit lay on the trees as long as possible, a few degrees of frost not injuring it in the least degree. At the present date examine fruit in store at frequent intervals, and remove every decayed and specked example. Of the older varieties of the Apple, Northern Greening is still one of the best keepers, Norfolk Beaufin is also excellent in Warwickshire, as also Northern Spy, Hanwell Souring, Newton Wonder, and Lane's Prince Albert. *H. T. Martin, Stoneleigh Abbey.*

KEW AND THE BRITISH MUSEUM.—I learn with much regret from a recent issue that there is a probability of the herbarium, or at least some part of it, being removed from the Natural History Museum at South Kensington to Kew. It seems to me that this will be a decided disadvantage to the general public. For visitors from the city and suburbs, South Kensington is fairly accessible, but to Kew is a much longer and more tedious journey. I live only four miles from the city, but to get to

logged first by Messrs. Thomas S. Ware, of Tottenham (now at Feltham). It differs so far from the typical *Galanthus Elwesii* in the larger bulb, broader, robust, and very erect foliage of a deep glaucous green colour. The flowers are more globular, pure white, and with almost the same distinct green marking on the inner perianth segments as *G. Elwesii*. To test any new form, I have had for years from different localities and different collectors or dealers, out of five kinds sent under such names as *G. Elwesii* Whittallii, *G. imperialis* (?), &c., I have selected three of the most distinct, and take the liberty to submit them to the Editor for inspection. So far as I am able to judge, they are as near as possible alike, with such small variation such as are every day produced by soil, position, and climate, in any other plant or flower. *G. Reuthe.* [Yes. Ed.]

GREENING V. NON-GREENING OF POTATO-SETS.—I thank your several correspondents for their courteous replies to my notes on the above subject. Up to the present time there is only one in favour of the practice of greening, and this from

Mr. Minty (p. 80); and he only advises it under exceptional conditions, namely, "that it is often necessary to take up early Potatoes before they are ripe, and before disease makes much headway amongst them, and ripen them by greening." I think in this case the question before us could be expressed in one word—"ripening," and not "greening," unless the latter is necessary to the former. As your correspondent "M." (p. 49) suggests, Potato-tubers, when growing upon their parent plants in their wild state, are mostly exposed to the air, and green upon their upper surface. Under cultivation we earth them up to blanch them for eating purposes. If the tubers are greened upon the surface of the ground whilst growing, I see no reason why they should not be quite as good for "seed" purposes as those which are grown beneath its surface. In earthing-up Potatoes, we are working under quite different conditions. All the tubers are covered with soil, none should be seen upon its surface, as when growing in their wild state, and we must regulate our practice accordingly. It seems to me that it is a rather drastic method of procedure to dig up Potatoes when in a state of immature ripeness, from the cool, moist, shady medium in which they are growing, and to suddenly expose them to the scorching glare of the sun's rays, such as is experienced at mid-summer, when unripe early Potatoes would be taken up. The skin of the tubers is very soft and tender at this period of their growth, and easily broken, and it would mean retarding rather than ripening. It may sometimes be thought necessary to take up Potatoes for seed purposes before they are ripe, to endeavour to escape the disease, but if, instead of exposing them to the sun, we placed them in single layers on trays, and put them in a cool, airy shed, the artificial ripening process would be more gradual, more effectual, and the soft, tender skins would not be so likely to suffer injury from burning. Potato-sets were greened long before the Potato disease made its first appearance in England, about the year 1845. I wonder what reasons were given in favour of this practice before that date! It has never yet been conclusively proved where the resting spores of the *Phytophthora infestans* hibernate, and until we know this, we have nothing definite to work upon; still, it is wise to be very particular in separating sound tubers from diseased ones, and from coming in contact with diseased Potato-tops when digging them up, also to remove them from the ground as quickly as possible, to escape the spores of the disease, which would be very thickly scattered about; and not to let them lie for several days, as is done when greening for seed purposes. Mr. Molyneux, after long experience, finds no difference in results obtained in following either of these methods of practice, and thinks greening is not worth the trouble and time it takes. "D.'s" experience is (p. 48) that Potato varieties do not naturally deteriorate in course of time, and here I cannot quite follow his line of argument. Prof. Johnson says (see *Tercentenary Report*), "It is a generally accepted principle in biology, that the possession of sexuality is a sign of vigour, that a plant possessing male and female organs, which result in the production of fruit and seeds, is more likely to maintain its tone, than a plant which has no fruit and seeds, and reproduces itself vegetatively." The Potato under general cultivation is reproduced vegetatively by means of tubers, and this repeated vegetative reproduction is the cause of the rapid degeneration in so many varieties. We introduce new varieties from seed obtained by crossing, and thus by the introduction of new protoplasm, renewed vigour, strength, and greater disease-resisting powers, are sometimes gained. Where are the Flukes, the Regents, the Lapstone Kidneys, of long ago? Some may say, "Oh! but we have now heavier cropping varieties, better flavoured ones, with superior cooking qualities." But the Fluke as a heavy cropping variety, in the height of its glory, has never yet been beaten; and for flavour, the old Lapstone Kidney, to my mind, has never yet been equalled, as I remember it upon the Norfolk soils. Careful cultivation, selection, storing, and change of soil, will do much in maintaining health and vigour; and some, as the Ashleafs, much longer than others, but these are exceptions, and not the rule. In conclusion, I would ask, Where are the champions of the green? there are many, I know. Are they afraid to enter the arena of debate; or are they so convinced of the error of their ways, that they will not do it again? *Alfred Gault, Leeds.*

EUCHARIS MITE.—Some time ago I was very much troubled with Eucharis mite; the destruction of the infested plants, and removal of the pots with the soil to a distant part of the garden, did not prevent new healthy plants from very soon being likewise infested with the mite, and suffering considerably. As I could find no cure for the mite, I experimented on my own account, with the result that all my plants are not only completely free of the mite, but are remarkably healthy and vigorous. I am very anxious to continue my experiments before publishing what I believe to be an absolute cure, but I have been unable so far to get any plants suffering from the mite. Would you allow me to make it known through your journal that I should be glad to receive mite-infested Eucharis-bulbs to experiment upon; the worse condition they are in the better they will suit my purpose. *J. S. Bergheim, Belsize Court, Belsize Park, N. W.*

NEWTON WONDER APPLE.—Anent the discussion on the merits and origin of the Apple Newton Wonder, I desire to say a few words, because I am of opinion that it is an older variety than many imagine. There is a tree at our place apparently planted about forty years ago, the fruit of which resembles this celebrated Apple. A fruit of it was shown two or three years ago to an expert from Kent, who at the time was in charge of an exhibit of Apples at the Royal Caledonian Society's autumn show, and who pronounced it to be as like the Apple in question as anything he could think of. This tree having been planted on a patch of grass outside the garden, has never been properly cultivated, so that the fruit is undersized; but it answers the description given of Newton Wonder, and the general characteristics of the fruit leads me to suppose that it must have been obtained by crossing Wellington with Blenheim Orange Pippin. It is not uncommon for an old variety to be rejuvenated by skilful management in the way of grafting and cultivation, as to be unrecognisable. The same must be said of Lane's Prince Albert, which we also grow, and which seems to have been planted about the same time as Newton Wonder, but inside the garden, where it is well tended, and which fruits abundantly every year. I do not know when this Apple was brought out as a new variety, but believe it to be within the last twenty-five years. The trees growing in this garden are of about the same age as the tree of Newton Wonder, and to test the accuracy of my opinion, I entered for and secured the 1st prize for that Apple against six or eight samples at the exhibition already mentioned, which proved it to be the proper variety. I do not mean to infer that these varieties simply received new names, and were sent out as new varieties, but would rather believe that they had been raised from pips in the ordinary way by those who lay claim to them. What has been once done can be again accomplished. It shows, however, that greater discriminations should be exercised by those entrusted with the naming and granting of certificates to new varieties. *W. W., Fifeshire.*

THE RIGHT OF A GARDENER TO HORTICULTURAL PRIZES: A CONUNDRUM.—No doubt the queries propounded on p. 147 under the above heading will elicit many replies. Evidently the reply to the second question is governed by the first, which, put into plain English is, "whether the gardener of an employer or the employer himself is the competitor?" It is the general practice to publish the name of the employer as being the competitor, just as in all the Royal Horticultural Society's competitions the name of the owner appears as the competitor, the gardener's name, who may, of course, after all, be the real competitor, being placed after his. Obviously, if the products exhibited are the property of the employer, the gardener, who is the employer's servant, cannot legally be the competitor, even though it may be notorious that the gardener is acting entirely on his own initiative, and may not even have asked his employer's sanction. But then it may be asked, how do show authorities regard this matter, as it is usually one of the fundamental obligations of their regulations, that the competitor shall be a subscriber. If the employer is not and the gardener is, it would seem obvious that the gardener is the actual competitor. But then how can he legally compete with his employer's products? Looked at in whatsoever way it may be, I cannot conceive of any other reply

to the conundrum, than that the gardener's employer, the legal owner of the exhibits, must be the real competitor, and as such legally entitled to receive all prizes awarded to such exhibits. But then there may enter in, as is not uncommon, private arrangements or agreements between gardener and employer with respect to exhibiting and ownership of prizes, but those may vary so much that they cannot furnish any satisfactory answer. But being satisfied that any prize or trophy won by one employer-competitor's exhibits is the property of the employer if he chooses to claim it, the gardener being not the competitor but solely an intermediary. It does seem so very clear that a gardener can have no claim to have possession of any trophy he may have won three successive times as such intermediary, for one competitor twice, and a second competitor once. Naturally in such a matter the conditions under which the prize may have been awarded count for much, but under whatever conditions competed for it does seem singularly improper for any gardener to lay claim to the ownership of such trophy under the circumstances stated in the conundrum. *A. D.*

— (1) As the plants exhibited are the property of the employer, and not of the gardener, the cup, medal, or money is clearly the property of the employer, unless there is a proviso to the contrary that the prize, or a portion of the prize, should go to the gardener. At the same time it is the custom, where the gardener makes the entry, for the cheque for any prize-money to be made out to him; if the employer made the entry, the cheque would, of course, be made out to the latter. This is the practice followed by the National Chrysanthemum Society—a practice based upon custom, and invariably concurred in by the employer. Unless the latter specially desires that any medal awarded should be engraved with his name instead of his gardener's, the name of the gardener is placed upon it, and only rarely the employer's, because the space for engraving is limited. In like manner all our challenge cups bear the name of the gardener, and that of the employer is also added after the gardener's. But, custom or not, there is no getting away from the fact that the exhibits are the property of the employer, and if he desires to do so he can put in a just claim for any prizes awarded. There are cases where the employer takes all the prizes, but sometimes bestows an equivalent upon his gardener. (2) In the case of the challenge cup, if the schedule sets forth that the cup shall be the property of the gardener winning it three times, then I hold change of employer would not affect the right of the gardener to become the owner of the cup. If the schedule of prizes states the cup shall become the property of the winner or exhibitor, then I hold the employer would stand legally in that position; and, in spite of any change of gardener, the exhibit of the employer would have to win to secure the ultimate possession of the cup, even though there was a different gardener at each show. In like manner, if a gardener wins the cup twice, and then changes his situation for another, and wins the cup for the third time for his new employer, yet the conditions of the schedule of prizes have not been observed; the two first wins could not count at all, except in the case of the proviso above-mentioned. I think it would be well in all cases for the employer's name to appear first on the exhibitor's card, though the usual practice is the opposite. Such exhibitors' cards as I use invariably have as a first line of the address the gardener's name. *R. Dean.*

— In reference to this question, "C. A." has, in my opinion, a perfect right to all prizes won by himself, providing he has the permission of his employer to exhibit, and no further arrangements are made. Also, I cannot conceive that an employer should make any difference when a Challenge Cup is the prize offered. The employer is not the gardener; and a man who wins a cup as stated in the *Gardeners' Chronicle*, in my opinion is certainly the owner of the same. There may be some differences of opinion with committee-men belonging to various societies, but no straightforward and well-meaning employer would try and prevent his gardener winning and keeping a cup, which was won on two previous occasions, just because he has changed his employer or situation. *E. Coleman.*

— As regards the important question which appeared in the last issue of the *Gardeners' Chronicle*, whose property is it when a prize is

won by a gardener—there can be no doubt from the point of law that the prize belongs to the gardener's employer, because whatever the gardener exhibits is the employer's property, although the gardener's abilities enabled the latter to win the prize. But I for one trust there are no employers who have the least wish to claim any prize won by his gardener. There would soon be an end of horticultural shows if the employer took the prize. To the next question, as to whether a gardener should be entitled to a prize cup won by him in two situations, I certainly say—yes; for he is fully entitled to it, and the greater credit for being able to hold his own in two different places. As many of us know, the soil, locality, and situation of some gardens do not render them favourable for raising productions of horticultural skill. *A. J. L., Wyfold Court.*

single or double; that mere vegetative vigour is not the cause of doubling, but that when once the doubling has been developed, and, as Mr. MASTERS said, "is constitutional or in the blood," then abundant food will favour the development of double flowers. Mr. MASTERS gives the following instance in the case of Balsams:—"One year we did not pot off from the seed pots for many weeks after they were ready. They were, in fact, starved before being transplanted, and only produced single flowers. I treated them liberally, and they then bore flowers as double as could be wished." Mr. G. DUFFIELD some years ago produced double *Lapagerias*, and remarked that both a white and a red-flowering plant, growing side by side, bore double flowers in the same year, and remarked that it seemed curious, as the plants were by no means remarkable for vigour. This, however, was apparently the cause. Mr. JANTON has also observed with regard to double Peas:—"I am of opinion that a check during the

of a partially bipinnate form of *Nephrolepis exaltata*, from Mr. Roupell. Many of the central pinnae are much elongated and thoroughly bipinnate, resembling small fronds. These fronds were taken about three years ago, but Mr. Roupell states that the plant has since resumed its normal pinnate type. Sowing the spores was suggested with a view to obtaining a decomposed strain of this species. 3. Fronds of three distinct varieties of three distinct species, found growing together in one clump in a wood near St. Austell, Cornwall, by Mr. Williams. They represent:—(a) A small crested form of *Lastrea pseudo-mas*, and it is worthy of remark that the well known *L. p.-m. cristata* (king of mule Ferns) was found in the same locality; (b) a polydactylous, foliose form of *Polystichum angulare* of very distinct type from the normal, but imperfectly polydactylous; (c) an extremely fine bipinnate form of *Polypodium vulgare*, with basal pinnules over 2 inches long, and deeply cut throughout. Mr. Williams stated that the remaining fronds were very much larger, but damaged, which indicates a very abnormal size, as well as development. Such an association of varieties is certainly quite unique, so far as any record is concerned, and as all three are redundant, the conditions of growth must be peculiarly favourable, which may have induced the "sports." The *P. vulgare* is quite distinct from previous finds; the other two have been closely paralleled. *Pteris aquilina cristata*, found by Mr. C. B. Green, Acton, at Faygate, Sussex. Some acres of this form exist near the railway station (half a mile), intermingled with about 50 per cent. of normal fronds.

Rhamnus californicus sp.—Mr. E. M. HOLMES exhibited a specimen of *Rhamnus californicus*, showing that the leaves in this species are evergreen, whilst the nearly allied species, *R. Parshianus*, loses its leaves in the autumn, the majority of the species of this genus being deciduous. The bark of both species is collected, and is known in commerce as "casaca sagrada." Attention was also directed to the fact that the bark, met with in commerce under the name of *Salix nigra*, does not possess the appearance of the bark of that species, of which the young twigs are black and polished, and have at first a waxy bloom on them. The bark of commerce more nearly resembles that of *Salix alba*. Mr. HOLMES also brought seeds (stones) of *Prunus nepalensis*, which he had received from Dr. GEO. WATT, C.I.E. (reporter on economic products to the Indian Government), as worthy of cultivation in this country, the fruit having a pleasant acid taste, and being used as a fruit in Nepal.

Crocus, sp. and vars.—Mr. E. A. BOWLES exhibited the following interesting series of *Crocus*. The type forms and albino varieties of *C. reticulatus*, pure white, except for a line or two of greyish blue at the base of the segments and extending down the perianth tube. (For some years I could not identify this variety with certainty, until one bulb in 1899 reverted to a striped form identical with the *C. reticulatus* v. *albicans* of Herbert, figured in the *Botanical Register*, vol. xxxiii., 16 (17), fig. 2). 2. *C. Imperati*.—Pure white internally, externally pale buff, almost white, and richly feathered with deep purple on the outer segments. The seedlings raised from this form produce the typical *Imperati*, with diphyllous, proper spathe. 3. *Versicolor*.—A form often confounded with *Imperati*, and known as *Imp. v. albidus*. The inner segments distinctly show the feathering so characteristic of *versicolor*, the form of Maw's, plate xvi, fig. 1, d. I have wild forms, collected near Mentone, which very nearly approach this, and, like this, they have a ligulate inner proper spathe. 4. *C. biflorus* v. *Weldani*.—A pure white form, sold as *Weldani* v. *niveus* and *dalmaticus* *niveus*. *C. candidus*.—Typical forms, white grained with blue externally, and the new yellow variety, clear orange grained externally with purple; a very floriferous and beautiful form. *C. cypricus*.—A small blue species with rich purple bases to the segments on the outer surfaces. The only species that has scarlet filaments. It, unfortunately, appears to have a delicate constitution in cultivation. *C. corsicus*.—Proper spathe monophyllous. *C. minimus*.—Proper spathe diphyllous; both natives of Corsica, the former in mountainous regions, the latter in lower ground. *C. reticulatus* v. *micranthus*.—A small-flowered form, much deeper lilac internally. 5. Seedling varieties of *Crocus chrysanthus*, approaching most nearly to the *v. corulescens*. It is the first year of flowering, and this perhaps accounts for the small blossoms. Two of these, internally, pure white with a bright orange throat; the outer surface of the outer segments are suffused with a rich crimson-purple with the exception of a narrow marginal band of a pale cream colour. The other has the outer segments sulphur-yellow, slightly paler on the inner surface, and grained with dull purple down the centre on the outer surface. The black spot at the base of the barbs of the anthers, so characteristic of *C. chrysanthus*, is present in this form and one of the former, but absent in the third specimen.

Scilla Turcip budding from root.—Mr. WILKS exhibited a root with two or three tufts of shoots springing from apparently the true root. It is not a very uncommon occurrence, and was probably due to some check from local injury, &c.

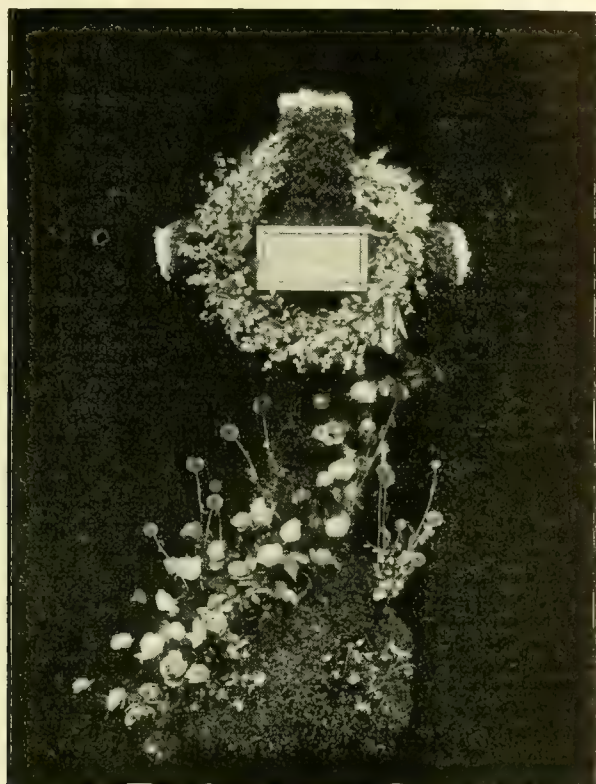


FIG. 65.—FLORAL DEVICE EMPLOYED AT THE FUNERAL OF HER LATE MAJESTY THE QUEEN. WREATH BY MESSRS. STANDISH AND CO., KNIGHTSBRIDGE.

SOCIETIES.

ROYAL HORTICULTURAL. Scientific Committee.

FEBRUARY 26.—Present: Dr. M. T. Masters, F.R.S., in the chair; and Messrs. E. Im Thurn, Odell, Houston, Holmes, Worsley, Rendle, Chapman, Groom, Saunders, O'Brien, Drury, Dr. Muller, Rev. W. Wilks, Prof. Boulger, and Rev. G. Henslow (Hon. Sec.).

Double Tulips.—Mr. HOUSTON exhibited and commented upon an early double Tulip, pointing out that the filaments of the stamens became petals (as in the Water Lily), and that from his experience a dry poor soil appeared to be conducive to the process of doubling. Stock seed, for instance, gave 90 per cent. of doubles under those conditions. On the other hand, Mr. WILKS observed that *Papaver Rhoeas* became double in a rich garden border, but rarely, if ever, so in the wild state. Professor BOULGER remarked that he had found *Ranunculus acris* and *Geum rivale* double in moist places; *Cardamine pratensis* has also occurred double in similar situations. Mr. DOUGLAS' experience was that Carnations raised in pots gave many more doubles than when in the open border, only 10 to 12 per cent. being single. This would seem to agree with Mr. Houston's experience. Mr. HENSLOW drew attention to the fact that it was long ago asserted by Mr. William Masters that a suspension of vitality must take place before a flower is formed, whether

growth of the plant, either from drought, frost, or even injury to the stem, may produce it. Hitherto all the double-flowered forms have been produced later in the season, just as late or second blossoms of Apples and Pears are frequently semi-double, while the early flowers of zonal *Pelargoniums* have often from six to ten petals. From GOEBEL'S observations, double-flowered Stocks can be raised from seed of single-flowered, up to 90 per cent., if the smaller and abnormally formed seeds are selected. Other testimony of a similar kind might be quoted in corroboration.

Distorted Growth of Yews.—Mr. J. W. Odell exhibited specimens, and observed that Yew trees in his district (N.W. Middlesex) are very much disfigured by the formation of cone-like galls. These are due to the gall-fly, *Cecidomyia taxi* (Ichabald). The specimens were from several trees. On the young trees the gall seems to be more persistent than on the older trees. On the former the leaves forming the cones appear to recurve after the pupae escape, assuming a rosette-like appearance, and beyond the arresting of the growth of the shoots affected no great harm seems to be done. On the older trees the cones and rosettes drop off rather freely, and this often gives a shabby look to the tree as the shoots die back and decay.

Crested Ferns, &c.—Mr. C. T. Drury exhibited the following specimens:—1. Fronds of *Phegopteris hexagonoptera truncata*, found by Mr. Maxon (Smithsonian Institute) on the banks of the Potomac in 1900. Living plants are in the exhibitor's possession. All the terminals are abruptly truncated with excurrent midribs like slender thorns. 2. Fronds

[A remarkable instance was figured in the *Gardener's Chronicle* on February 3, 1877.]

Phaenopis-macul.—Mr. CHAPMAN brought specimens of this insect. The only remedy that could be suggested was a careful search for them at night.

Epilobium-gledit.—Mr. O'BRIEN exhibited flowers in a malformed state. Dr. MASTERS undertook to examine and report upon them.

Pinus-banksiana.—Dr. MASTERS exhibited a branch with cones of this handsome W. American Pine, now sometimes called *attenuata*. It is one of the species the cones of which remain for some years upon the tree, and only shed their seeds after a forest fire.

Winter Acute Germinating.—Mr. HENSTOW showed specimens of *Eranthis-hymnalis* to illustrate the apparently abnormal fact of the tuber being first formed on the slender tap root, and not on the caudicle.

The "Americas," or "Atlantic" British Plants.—He commented upon these terms, the first given by Ed. Forbes to plants found in Normandy, the Channel Islands, and S.W. England, as well as up the west side to Scotland; the latter name was H. C. Watson's. He pointed out that their true source is the S. European or Mediterranean regions, and exhibited specimens of *Ranunculus ophioglossifolius* from Jersey (now extinct), from Hyères, and from Malta, as well as other plants illustrating the same fact.

Sabious Bracts Present.—He also exhibited specimens in which the florets were suppressed, but the bracteoles had become elongated and sub-foliateous. It was comparable with the green Dahlia, wheat-eared Carnation, &c.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

FEBRUARY 7. At the meeting held on this date, the following awards were made:—

FIRST-CLASS CERTIFICATES.

Cypripedium × *Hyeanum*, to Mrs. Briggs-Bury, Accrington.
Cypripedium × *Beckmani*, to Mrs. Briggs-Bury, Accrington.
Odontoglossum crispum var. *Fairy Queen*, to Mrs. Briggs-Bury, Accrington.
Odontoglossum crispum var. *Kegeljani*, to A. Warburton, Esq., Haslingden.

AWARDS OF MERIT.

Cypripedium × *Wilkinsoni*, to Mrs. Briggs-Bury, Accrington.
Cypripedium × *Euryades* var. *Hera*, to Mrs. Briggs-Bury, Accrington.
Cypripedium callosum var. *Gratrixa*, to S. Gratrix, Esq., Manchester.
Dendrobium × *Dulce*, Oakwood var., to Mr. J. Cypher, Cheltenham.
Dendrobium × *splendissimum* var. *giganteum*, to Mr. J. Cypher, Cheltenham.
Cypripedium × *Harrisianum* *superbum*, to Mr. J. Cypher, Cheltenham.
Odontoglossum × *Adrianae*, to R. Ashworth, Esq., Newchurch.

Odontoglossum crispum var. *Queen Alexandra*, to T. Baxter, Esq., Morecambe.
Odontoglossum Andersonianum var. *Golden Queen*, to T. Baxter, Esq., Morecambe.

Odontoglossum microspilum, to T. Baxter, Esq., Morecambe

CULTURAL CERTIFICATE.

Cypripedium × *Lathamianum inversum*, to W. Duckworth, Esq., Flinton.

SILVER GILT MEDAL.

For group of *Odontoglossums*, to T. Baxter, Esq., Morecambe.

VOTES OF THANKS.

For groups, to Mrs. Briggs Bury.
For groups, to Mr. A. J. Keeling.
For groups, to Mr. J. Cypher.
For groups, to A. Y. Lees, Esq.

FEBRUARY 21:—

FIRST-CLASS CERTIFICATES.

Laelio-Cattleya × *"Imperatrice de Russe"*, to Mrs. Briggs-Bury, Accrington.

Cymbidium hookerianum, "Bank House var.," to Mrs. Briggs-Bury, Accrington.

Cattleya Trianae var. *"Furore"*, to J. Leemann, Esq., Heaton Mersey.

Laelia × *nigrescens* (*L. pumila* × *L. tenebrosa*), to J. Leemann, Esq., Heaton Mersey.

Dendrobium × *Apollo alba*, to J. Leemann, Esq., Heaton Mersey.

AWARDS OF MERIT.

Odontoglossum × *Andersonianum* var. *Earl Roberts*, to T. Baxter, Esq., Morecambe.

Odontoglossum × *Andersonianum* var. *Mabel*, to T. Baxter, Esq., Morecambe.

Odontoglossum crispum "Dorothy" (yellow), to Messrs. Charlesworth & Co., Bradford.

Cattleya Trianae var. "Mafeking," to A. Warburton, Esq., Haslingden.

Cypripedium × *bingleyense*, to Mr. A. J. Keeling, Bingley, Yorks.

MEDALS.

Silver-gilt Medal for Group, to J. Leemann, Esq., Heaton Mersey.

Silver Medal for Group, to Mr. J. Cypher, Cheltenham.

Bronze Medal for collection of out *Cypripedes*, to O. O. Wrigley, Esq., Bury, P. H.

CHESTER PAXTON.

FEBRUARY 16.—On the occasion of the meeting of this Society on the above date, at the Grosvenor Museum, Mr. G. P. Miln read a paper entitled "The Commercial Aspect of Apple and Pear Culture." In his opening remarks, he commented upon the scarcity of home-grown fruit at this season of the year, and made mention of the fact that although he endeavoured to buy home-grown Apples in Liverpool a few days previous, the larger dealers informed him that only American fruit was now obtainable. A collection of Cheshire-grown fruit, shown at this meeting, however, went to prove that both Apples and Pears of home growth are still to be had, and of excellent quality. Continuing, he remarked that the imports of foreign Apples alone into Great Britain last year amounted to 2,128,177 cwt., the value of which he estimated at about one and a half million of money. A great part of these, he contended, could have been produced at home. He gave as an example a Cheshire orchard, one and a half acres in extent, which was planted some eight years ago, and which last year produced at the rate of 75 cwt. of Apples, 43½ cwt. of Pears, 12½ cwt. of Plums, per acre, which realised a gross value of £70 per acre. These figures were decidedly encouraging, and went to prove that Apple-growing could be made a profitable industry, provided proper methods were adopted. Apart from planting the best varieties in suitable situations, Mr. Miln emphasised strongly that care should be taken to gather all fruit carefully, that it should be graded so that the samples should be of a uniform character, and that special care should be exercised in packing where the fruit had to travel a distance. In his concluding remarks, he commented upon the superior qualities of the best British-grown Apples over that of foreign-grown fruit, which was strikingly borne out by the dishes of British and American Apples staged on the table. Amongst the more prominent of these were Golden Spire, Warner's King, King of Tomkin's County, Yorkshire Greening, Bismarck, Farmer's Glory, Mère de Ménage, Annie Elizabeth, and several others. Excessive railway rates, quick transit, and other important matters affecting fruit-culture were also touched upon, and discussed by the members who were present. H. N.

WARGRAVE GARDENERS'.

FEBRUARY 20.—The members of the Wargrave Gardeners' Mutual Improvement Society met on the above date to hear a paper on "Peaches and Nectarines," by Mr. G. HATCH, gardener to Sir John Edwards-Moss, Bart., of Thamesfield.

After referring to the introduction of the trees from Persia in the sixteenth century, he gave exhaustive cultural details on the chief points connected with their management under glass and in the open. Canker, blister, spider, black and green-fly were the most troublesome pests, and methods of eradication were explained. A long and useful discussion ensued, many members taking part in it.

Some fine exhibits were staged, Mr. PRIEST being awarded a Cultural Certificate for a useful group of Palms, *H. Colchey*, Hon. Sec.

BERKSHIRE, READING, AND DISTRICT AUXILIARY OF THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

THE first annual meeting in connection with the above Auxiliary was held on Friday evening last in the Gardeners' Club Room, Old Abbey Restaurant, Reading. Mr. C. E. Keyser, President, in the chair. There were present Mr. Arthur W. Sutton, Mr. Martin H. F. Sutton, Mr. Harry Veitch (Treasurer of the parent Society), Mr. Owen Thomas, and Mr. G. J. Ingram (Sec.), as a deputation from the London Committee. There were also present many of the leading gardeners in the neighbourhood.

After the annual report and balance-sheet had been read and adopted, Mr. Veitch rose and congratulated the members on the amount of success which had attended their efforts during the past sixteen months, enabling them to raise since the formation of the Auxiliary over £130, and spoke in hopeful terms of the bright future there appeared to be in store for the Reading branch. The election of officers was proceeded with, and Mr. C. E. Keyser was unanimously re-elected President for the second year, with Mr. A. W. Sutton, Hon. Treasurer, and Mr. H. G. Cox, Hon. Secretary. With the exception of three or four members who had left the district the committee were re-elected, with the addition of Messrs. Barnes, Macdonald, Nichols, E. S. Pigg, Harris, Tubb, Hatton, and Gibson.

The balance-sheet showed that from September 1, 1899, to December 31, 1900, the donations, subscriptions, life members' contributions, and subscriptions to parent society, amounted to £135 16s. 6½d. Remitted to parent society the sum of £103 19s.; and printing, stationery, postage, and cheque-books, amounted to £9 7s. 10½d.; leaving a balance at the bank on December 31, 1900, of £23 11s. 1½d.

A warm discussion ensued during the meeting as to the privileges granted by the Institution to life members and "fifteen years subscribers," and to the necessity there was of supporting the parent institution by annual subscriptions; one speaker pointing out that there was in the future, say fifteen or twenty years time, a probability that if life members were made at the present rate for another few years, the Institution would not be able to meet its liabilities. Messrs. Veitch, Thomas, and Ingram, made some very

interesting remarks on the subject, directing particular attention to the fact that the Institution was a benevolent and not a benefit society, and each thanked the members for bringing such an important matter before them. A vote of thanks to the deputation and to the chair brought to a close a meeting described by the deputation as one of the best representative meetings ever held in connection with the Institution.

SCOTTISH HORTICULTURAL.

MARCH 5.—This Society met at 5, St. Andrew Square, Edinburgh, Mr. C. Comfort in the chair. There was a good attendance of the members, and an essay on "The Management of the Roots of Hardy Fruit Trees," by Mr. M. Temple, Carron House, Falkirk, was read by the secretary in the absence of Mr. Temple through illness. The exhibits were good, and included two fine Orchids sent by Mr. Wood, gr. to Mr. J. Buchanan of Oswald House, and a number of blooms of *Rhododendron Countess of Haddington*, from Mr. A. Johnston, gr., Hay Lodge, Trinity. The usual votes of thanks were accorded at the close of the meeting. D. T. F.

IRELAND.

THE weather for the past month has been decidedly pleasant; there has been little rain or mist, but a few slight frosts. Since the commencement of March, however, rain has fallen in quantity. Bulbous plants are gradually unfolding their flowers, and fruit trees are bursting into bud.

THE BOTANIC GARDENS.

The conservatory at Glasnevin is radiant with *Cyclamens*, *Cinerarias*, flowering bulbs, *Eriostemon myoporoides*, &c. In the Orchid-houses, hybrid *Cypripediums* make a fine display. *Cattleya Trianae* is showy, and the uncommon *Phaius Bernaysii* has erect flower-spikes with blooms of pale sulphur-yellow corolla and white lip. A. O'Neill.

Obituary.

MISS E. H. CRIPPS.—There died on Tuesday, February 26, at Tunbridge Wells, at the age of 61 years, a well known inhabitant of that pleasant town, and the proprietress of one of the oldest and most thriving businesses within its boundaries. It may be of interest to many of our readers if we give a brief sketch of the nursery founded by the late Mr. Cripps, extracted from the *Tunbridge Wells Advertiser* of March 1, 1901:—

"It was in 1837 when Mr. Cripps commenced with nurseries in what are known as 'Twenty Acre Wood,' and upon the expiry of the lease he recommenced near Cumberland Walk. It was a modest beginning, but that shrewd business ability and acumen which revealed itself so prominently in after years, enabled him to rapidly increase his operations, and a few years later he took the nurseries in Frant and Forest Roads. At that time they were fields and woods, but the whole of the 80 acres were eventually brought under cultivation, and a considerable area also covered with glasshouses.

"Singular as it may appear, the firm is better known out of Tunbridge Wells than within. In many places in England the name of Messrs. Cripps is perhaps more familiar than it is here in our borough. The business never did depend for its existence upon local support, but from its inception has always sent an enormous quantity of goods away, and a traveller was constantly kept on the road, from one end of the country to the other. On the principle of sending coals to Newcastle, Messrs. Cripps are constantly sending enormous quantities of flowers, &c., to France and other continental countries.

"The name of Cripps is one that is fairly familiar in the world of floriculture and horticulture. The late Mr. Cripps, in conjunction with Mr. Field, who has been with him and his successors for forty-seven years, produced a number of floral novelties, and particularly successful were they in producing varieties of *Clematis*, several of which Mr. Field himself hybridised. Everything that one could expect to find in a nursery is grown on the 110 acres which are now being cultivated by the firm; everything from an Onion to an Orchid, and

Orange-tree to an Oak. Attention has especially been paid to the rearing of Conifers, and this season a plant named *Retinospora obtusa Crippsii* is being sent out. At the Temple shows of the Royal Horticultural Society this firm have always done uniformly well, and took numerous medals.

"It is expected that the firm, which has been ably managed of recent years by Mr. Taylor, will continue as before, and that there will be no radical alteration."

MR. J. MITCHINSON.—In our last issue we announced the death of Mr. John Mitchinson, of Truro. A few particulars of his career will not be unacceptable. Mr. Mitchinson's father was head gardener and steward at Glynn (where the deceased was born), the estate of Lord Vivian, better known as Sir Hussey Vivian, the gallant cavalry officer who led the final charge of Picton's Horse at Waterloo. The late Mr. Mitchinson's mother was a daughter of Mr. Rendle, the nurseryman and seed-merchant of St. Austell and Plymouth, who made a fortune out of his patent for overlapping glazing. Mr. Mitchinson started in business as nursery seedsman at Truro about half a century ago, in a small way at first, but his integrity won him a big share of the local trade, and he built a large block of stores and warehouses in Quay Street, specially adapted to the requirements of his business; he also acquired the St. Austell Nursery of his grandfather, thus extending his connections in north Cornwall, and opened up a branch establishment about thirty years ago at Penzance, in the extreme west. His knowledge of practical gardening was exceedingly thorough, and his abilities as a landscape gardener very great. He directed the arrangement of a large number of gardens in and near Truro, and one of his last achievements in this direction was the laying out of Waterfall Gardens, the little park of the capital of Cornwall. At one time his business as a nursery seedsman was the largest in Cornwall, but some years ago he gave up the seed business. He was for a short time on the Town Council at Truro, but he cared little for local politics. He was a man of uncommon mental abilities, and possessed a remarkably retentive memory. His portrait in oils, in which he is represented reading the *Gardeners' Chronicle*, was painted shortly after his marriage. Mr. Mitchinson introduced into general cultivation several valuable vegetables, which had hitherto only been grown in Cornwall. The early and late forms of Broccoli which bear his name had been grown for generations in Cornwall, and the seeds of both were guarded very jealously by all those who had secured the true strains; and the surplus stock would be treasured up with the greatest care for years, until indeed there came the inevitable year of short supply, or no supply at all. It was only after the greatest difficulty, and a very heavy "consideration," that any market gardener would part with even a few ounces of seed. Mr. Mitchinson was also, I believe, the first to place in general cultivation the Market Jew Turnip, which appears to have originated at Marazion, near Penzance. His only surviving son, Mr. J. G. Mitchinson, who was for some years in business at Penzance, is now a prominent man at Christchurch, New Zealand.

A. HENDERSON.—It is with very great regret we have heard of the death of Mr. A. Henderson, whose retirement from the position of head-gardener to the Earl of Manvers at Thoresby was adverted to in the *Gardeners' Chronicle*, Feb. 17, 1900. We then stated that Mr. Henderson was left an annuity by the late Earl Manvers, and that he resigned his charge of the gardens at Thoresby after thirty-eight years service, during which time he had been shown the greatest kindness by his employer. This in itself is a sufficient testimony that Mr. Henderson fulfilled the duties of his office faithfully and well. His many horticultural friends will hear with grief that Mr. Henderson has only survived his relaxation from work for so short a period. Deceased, who was interred at Thoresby on March 5, leaves a widow and married daughter.

MARKETS.

COVENT GARDEN, MARCH 7.

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Asparagus "Fern," bunch ...	1 0-2 0
Carnations, per doz. blooms ...	1 6-2 6
Cattleyas, per dozen ...	9 0-12 0
Eachiras, per dozen ...	2 0-4 0
Gardenias, per doz. ...	1 6-2 6
Lilium Harrisii, per dozen blooms ...	4 0-6 0
Lilium lancifolium album, per dozen blooms ...	1 6-3 0
Lilium rubrum, doz. ...	3 0-5 0
Lilium longifolium, per dozen ...	4 0-6 0
Lily of Valley, per doz. bunches ...	6 0-12 0
Maidenhair Fern, per doz. bunches ...	4 0-8 0
Mignonette, per doz. bunches ...	4 0-6 0
Odontoglossums, per dozen ...	4 0-8 0
Roses, Tea, white, per dozen ...	1 0-2 0
— Catherine Mermet, per dozen ...	3 0-6 0
Smilax, per bunch ...	3 0-5 0
Tuberose, per doz. blooms ...	0 4-0 6

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantums, p. doz. ...	5 0-7 0
Arbor-vita, var., doz. ...	6 0-36 0
Aspidistras, p. doz. ...	18 0-36 0
— specimen, each ...	6 0-10 6
Cannas, per dozen ...	18 0 —
Crotons, per doz. ...	18 0-30 0
Cyclamen, per doz. ...	8 0-10 0
Dracenas, var., per dozen ...	12 0-30 0
— viridis, per doz. ...	9 0-18 0
Ericas, var., per doz. ...	12 0-36 0
Econymus, various, per dozen ...	6 0-18 0
Evergreens, var., per dozen ...	4 0-18 0
Ferns, in variety, per dozen ...	4 0-18 0
Ferns, small, per 100 ...	4 0-6 0
Ficus elastica, each ...	1 6-7 6
Foliage plants, var., each ...	1 0-5 0
Lily of Valley, each ...	1 9-3 0
Lycopodiums, per dozen ...	3 0-4 0
Marguerites, per dozen ...	8 0-12 0
Myrtles, per dozen ...	6 0-9 0
Palms, various, ea. ...	1 0-15 0
— specimen, each ...	21 0-63 0
Pelargoniums, scarlet, per dozen ...	0 12 0
— Ivyleaf, per doz. ...	8 0-10 0
Spiras, per dozen ...	6 0-12 0

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, English, per bushel—	
cookers, large ...	4 0-5 0
various ...	2 0-4 6
— Nova Scotia, per barrel ...	12 0-16 0
— Californian, per box ...	8 0-9 0
— Wellingtons ...	4 0-7 0
Bananas, bunch ...	5 0-8 0
— loose, per doz. ...	1 0-1 6
Cobnuts, lb. ...	0 5 1/2
Cranberries, case ...	16 0 —
Chestnuts, Italian, per bag ...	16 0 —
Grapes, Alicante, lb. ...	1 3-2 0
— Colmar, A. per lb. ...	2 6-3 0
— Colmar, B. per lb. ...	1 6-2 0
— Almeida, doz. lb. ...	5 0-8 0
Grapes, Belgian, lb. ...	1 3-1 6
Lemons, case ...	10 6-15 0
Lyches, new, pkt. ...	1 0 —
Oranges, Navel ...	15 0-17 6
— Bitter, case ...	7 0-9 6
— Blood ...	9 0 11 0
— Murcia, case ...	7 0-7 6
— Tangerine, box of 200 ...	6 6 —
— Valencia ...	16 0-17 0
Pears, French stewing, crates ...	7 6 —
— Californian Easter Beurre, half cases ...	15 0 —
Pines, each ...	2 6-5 0
Sapucaia nuts, per lb. ...	1 3 —
Strawberries, per lb. ...	4 0-8 0
Walnuts, cwt. ...	38 0 —

VEGETABLES.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Artichokes, Globe, per doz. ...	3 6-4 0
— Jerusalem, sieve ...	0 9-1 0
Asparagus Sprue ...	0 —
— Paris Green, bun. ...	4 0 —
— home-grown, per bundle ...	6 6 —
— Spanish, bundle ...	1 0 —
Beans, dwf. Madeira, per bkt. ...	1 6-3 0
— Ch. Islds. and home, dwf., new, per lb. ...	1 9 —
— French, dwf., packets ...	1 0 —
Barb de Capucine ...	0 4 —
Betroot, bushel ...	1 3-1 6
Beet, per dozen ...	0 6 —
Broccoli Sprouts, bushel ...	0 9-1 0
Brussel Sprouts, per sieve ...	1 0-1 6
Cabbage, tally ...	2 0-3 0
— dozen ...	0 9 —
Carrots, 12 bunches washed, in cwt. bags ...	2 0-2 6
Carrotflowers, per dozen ...	0 9-2 0
— crate ...	4 0-6 0
— tally ...	3 0-6 0
— Italian, basket ...	8 0 —
Celeriac, per dozen ...	2 0-2 6
Celery, doz. buds. ...	14 0-21 0
— unwashed, doz. ...	8 0-18 0
Chicory, per lb. ...	0 3 —
Cress, doz. punnets ...	1 6 —
Cucumbers, doz. ...	5 0-8 0
Endive, new French, per dozen ...	1 6-1 9
— Batavian, doz. ...	2 0 —
Garlic, new, lb. ...	0 2 —
Horseradish, English, bundle ...	1 0-1 6
— foreign, per bunch ...	0 9-1 0
Horseradish, loose, per doz. ...	1 6 —
Leks, per dozen bunches ...	1 0-1 6
Lettuces, French Cabbage, doz. ...	1 6 —
Mint, per doz. bunches, new ...	5 0 —
Mushrooms, house, per lb. ...	0 9 0 10
Onions, picklers, per sieve ...	2 0-3 0
— per bag ...	3 0-3 6
— cases ...	8 0 —
— English, p. cwt. bag ...	4 6-5 0
Parsley, 12 bunches per sieve ...	1 0-2 0
Parsnips, cwt. bags ...	0 9-1 0
Potatoes, per ton ...	85 0-125 0
— New, per cwt. ...	10 0-14 0
— New French, lb. ...	0 2 1/2 0 3
— New France, Channel Islds., per lb. ...	0 5-0 6
Radishes, per 12 bunches ...	0 9-1 6
Rhubarb, Yorks, per dozen bundles ...	1 0-1 6
Salad, small, punnets, per dozen ...	1 3 —
Savoy, per doz. ...	0 6-1 0
— per tally ...	2 6-4 0
Scotch Kale, bush. ...	1 0 —
Seakale, doz. punnets ...	10 0-12 0
Shallots, new, p. lb. ...	0 2 —
Spinach, French, crates ...	3 6-4 0
Salsify, bunch ...	0 4 —
Tomatoes, Canary deeps ...	2 0-2 6
Turnips, per dozen in bags ...	1 6-2 0
Turnip tops, bush. ...	1 0 —
Watercress, p. doz. bunches ...	0 6 —

REMARKS.—Cape fruits include, Peaches, per case, 15 to 75; Plums, 25. 6d. to 10s.; Nectarines, 5s. to 8s.; Pears, 3s. 6d. to 6s.; Grapes, 10s. The Plums vary considerably. Grapes are just beginning to arrive. Green vegetables and roots remain much the same in price as last week, and the trade is depressed. Small home-grown Apples, of which there are plenty, meet with little demand.

POTATOES.

Various sorts, 55s. to 105s. per ton; foreign bags, 50 kilo, 4s. to 5s.; Dunbar Main Crop, per ton, 120s. to 125s.; Up-to-Date, 125s. John Bath, 32 & 34, Wellington St., Covent Garden.

SEEDS.

LONDON: March 6. — Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that there is now a fair seasonable inquiry for farm seeds, which a spell of favourable weather would, without doubt, greatly and quickly increase. Meantime, quotations all round show no important variation. German Red Clover-seed keeps particularly steady, whilst America is still taking back her own seed from various European ports. Alsike, White, Trefoil, Timothy, and Lucerne-seeds realise former terms. Perennials pursue their rapid upward career, and it is significant that Irish Houses are busily buying back Rye-grasses previously sold by them. Spring Tares are scarce and firm, whilst Mustard and Rape-seed are steady. The Canary-seed market exhibits great strength, but Hemp-seed is dull and neglected. Blue Peas, Haricot Beans, and German Lentils, realise full prices.

CORN.

AVERAGE PRICES of British Corn (per imperial qr.), for the week ending March 2, and for the corresponding period of 1900, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1900.	1901.	Difference.
s. d.	s. d.	s. d.	s. d.
Wheat ...	26 4	25 11	- 0 5
Barley ...	24 6	25 0	+ 0 6
Oats ...	16 10	17 9	+ 0 11

GARDENING APPOINTMENTS.

MR. GEORGE SHERGOLD, for the past two years Gardener to J. F. GEMS, Esq., Eaton Grange, Cobham, Surrey, as Gardener to F. A. BROWN, Esq., "Norcott," Hampton Wick, Middlesex.

MR. L. B. STEWART, after spending nearly six years in the gardens of the Royal Botanic Society, Edinburgh, as Head Gardener to J. H. ELWES, Esq., Colesborne, Andoversford, Gloucestershire.

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period February 24 to March 2, 1901. Height above sea-level 24 feet.

1901.	DIRECTION OF WIND.	TEMPERATURE OF THE AIR.				TEMPERATURE OF THE SOIL AT 9 A.M.			
		At 9 A.M.		Day.	Night.	At 1-foot deep.	At 2-foot deep.	At 4-foot deep.	LOWEST TEMPERATURE ON GRASS.
		Dry Bulb.	Wet Bulb.						
FEBRUARY 24 TO MARCH 2		Dry Bulb.	Wet Bulb.	Highest.	Lowest.	RAINFALL.			
SUN. 24	W.S.W.	41-1 30	1 46	3 39	5	39	3 40	0 42	34-2
MON. 25	W.S.W.	41-4 30	8 49	3 37	4	39	9 40	5 42	8 30-5
TUES. 26	W.S.W.	42 2 40	1 44	9 30	0 33	40	4 41	0 42	8 20-2
WED. 27	W.S.W.	44 5 48	7 48	7 41	0	41	1 41	3 43	0 39-0
THU. 28	W.S.W.	43-4 11	7 51	6 38	5 0	41	4 41	2 43	2 28-2
FRI. 1	S.S.W.	47 6 46	1 53	3 37	5	42	1 42	2 43	2 26-2
SAT. 2	S.S.W.	44 7 43	7 53	6 35	0 21	42	0 42	5 43	3 26-2
MEANS...		43 7 42	0 49	7 38	5 0	41	3 43	0 39	5

Remarks.—The weather has been warm and spring-like, but at times dull and cold.

THE WEATHER IN WEST HERTS.

The past week was the warmest as yet experienced this year. On Tuesday the shade temperature rose to 54°, and in the coldest night the exposed thermometer showed only 3° of frost. The ground has now become fairly warm—the temperature at 1 foot deep being about 1°, and at 2 feet deep 5°, warmer than is seasonable. Rain fell frequently, and to the total depth of more than an inch. During the week 5 gallons of rain-water came through the bare soil gauge, and 14 gallons through that covered with short grass. There was about an average record of bright sunshine; and the air continued as a rule, rather dry for the time of year. The first frost since appeared on a scale on both of the wild Hazel on the 2nd inst., which is a fortnight later than average for the previous ten years, and, with the exception of 1895, later than in any of these years. Narcissus minimums were first out on the 2nd inst., 10 days later than last year.

FEBRUARY.

This proved a very cold February, indeed, with the exception of that in 1895, the coldest for thirteen years. The closing week was moderately warm, but during the rest of the month the temperature remained throughout persistently low. Temperatures below the freezing-point were registered by the thermometer exposed on the lawn on all but two nights, but at no time was there more than 19° of frost. Rain or snow fell on fourteen days to the aggregate depth of nearly 1½ in., which is about half an inch below the average for the month. February, although one of the driest months of the year, is for some reason surnamed "Fill-tyke." I can only suppose because at this season the springs begin to show decidedly the effects of the past autumn and winter rainfall upon them. Since the winter half of the drainage year began in October last, the total rainfall for those five months has fallen short of the average by 1½ in., which is equivalent to a loss of about 9 gallons of rain-water on each square yard of surface in my garden. This was not only a cold and dry February, but also an exceptionally gloomy one—the record of bright sunshine falling short of the average for the month by more than three-quarters of an hour a day, and with one exception being less than in any February for thirteen years. The atmosphere was exceptionally calm, and for 390 hours, or sixteen days, the direction of the wind was some point between west and north. Taking the month as a whole the air was unusually humid.

THE WINTER.

Regarded as a whole this was a decidedly mild winter, but during its course there occurred three distinct periods of cold weather, lasting altogether more than a month. At no time, however, did the exposed thermometer register more than 19° of frost. The fall of rain fell short of the average by about an inch, and the record of bright sunshine by nearly an hour a day. The past winter may be briefly described as having been unusually mild, dry, and sunless. *E. M., Berkhamsted, March 5, 1901.*

ANSWERS TO CORRESPONDENTS.

BLINDNESS IN NARCISSUS: *A. H. K.* The cause is at present unknown.

BUTCHER'S BROOM: *F. T. C.* The plant is usually, but not always, dioecious, producing its male and female flowers on different plants. Any nurseryman could supply you.

CALANTHES: *Calanthe.* Procure them at this, the resting season of the plants. Species that are not difficult to cultivate are *C. vestita* and its varieties; *C. Domini*, very free; *C. Sanderiana*, *C. Regneri*, *C. Turneri*, blooms late; *C. Turneri nivalis*, *C. Veitchi*, a hybrid between *Limatodes rosea* and *C. vestita*. Prices vary from 3s. 6d. to 7s. 6d. per plant.

CONIFERS: *Z. Y. X.* 1, not found; 2, *Juniperus communis*; 3, *Abies nobilis*; 4, *Juniperus virginiana* var. *Schottii*; 5, *Tsuga Brunonian*; 6, *Cephalotaxus Fortunei*; 7, *Libocedrus decurrens*. Without the cones it is not always possible to give the names correctly, but we believe the names given above are correct.

CRINUM WORSLEYI × **AT P. 72:** The parentage is not fully stated. It was raised from *C. scabrum* fertilised by the pollen of *C. Moorei*.

EDGING FOR THE NURSERY QUARTERS: *A. H. K.* Nothing is more useful than Box, it being always in demand for forming edgings. Clinkers and burrs, covered with Ivy, Periwinkle, &c., may be used. Cordon Apples, Pears, and Quinces, double and single branched, and horizontally trained, about 15 inches above the soil, look very well, but their presence is apt to be a hindrance to carting operations. Ivies of saleable sizes grown in pots, and these sunk in the soil, combine, like Box, the useful with the ornamental; as do the American Blackberries similarly treated. Strawberries, alpine, Hautbois, and the ordinary hybrid varieties, are plants out of which edgings are sometimes formed; not to mention Aubrietias, *Campanula carpatica*, *Gentiana* in variety, *Arabis*, *Iberis*, hardy *Ericas*, *Polyanthus*, *Anemone hortensis*, *Hepaticas*, double-flowered Primroses, Violets, &c.

FLY: *Ashby.* We cannot add anything to what has already been stated. Moreover, the insects have been thrown away. Perhaps there were other insects that we did not see.

FRENCH BEAN PLANTS: *Beans.* The injury to the leaves may be due to the flies you mention,

but of which none was found, or to snails, slugs, weevils, &c., and you must examine the plants by night for the depredators. We remark the very deep tint of the leaves, due probably to an over-rich soil, or to manure-water, &c. This exuberant growth will not favour podding, rather the reverse. Manures are better applied to the plants after the pods have set freely. The best kind of compost for French Beans is one consisting of turfy-loam two-thirds, stable-dung in a decayed state (not old Mushroom-bed stuff), and lime-rubble one-third; the whole being used in a rough state, and not sifted. Press the soil firmly below the seeds, and lightly above them. Only half fill the pots at the first, earthing up being done before the plants come into bloom. At that time the warmth ought to be increased at night to 60°, and by day to 70° to 80°. The plants should be well syringed morning and afternoon, and a moist atmosphere maintained by day, or red-spider will infest them to their detriment, and perhaps the loss of the crop.

FUNGUS IN MUSHROOM-BED: *E. G. A.* The fungus is one of the puff-balls, the spores of which have probably been brought in with the manure.

GARDENIAS: *Information.* Space does not allow of our affording you full directions for growing these plants; their needs are few and simple. Low span-roofed houses, the plants set out in beds in rich loam and peat, or kept in pots; much warmth, diligent syringing, and plenty of water whilst growing, and to be kept free from mealy-bug, which however will not infest them if they are heavily syringed. The species mostly grown are *citriodora*, *florida intermedia*, *Fortunei* (flowers of large size, but not so free as *florida intermedia*), *radicans*, and *radicans major*.

GLADIOLUS AND BEGONIAS TO BLOOM IN SEPTEMBER: *D. K. L.* Plant the former late this month, and the latter early in June.

INSECTS: *E. C.* The grubs in the foliage you have sent us are the larvae of a dipterous fly known as *Phytomyza nigricornis*, and the small flies enclosed are the perfect insects, among which may also be some of an ichneumon-fly which is parasitic upon the *Phytomyza*, and helps to keep it in check. You may see a full description of these flies by the late Professor Westwood, and illustrations of the perfect insects (much magnified), and of the dry puparium in a *Marguerite* leaf, by looking back to *Gardeners' Chronicle*, May 12, 1883, p. 593. The best way to combat the pest is to remove the worst-infested leaves from the plants, and go over the rest and squeeze the grubs between the thumb and finger. Much good may be effected by syringing the plants with a solution of quassia or similar liquid that will serve to render them disagreeable to the perfect flies.

INSECTS IN ORCHID-HOUSES: *J. D. & Son.* You seem to be greatly plagued with tropical and native insects, some, as you tell us, having claws like the lobster, and running backwards when disturbed. We can but recommend you to carry out a system of constant watchfulness, perfect cleanliness in the plants themselves and in the houses, lime-washing the walls, painting the woodwork, repairing the putty where loose, clearing out every vestige of rubbish, and shovelling off the unclean crust of soil, gravel, or whatever loose material the floor consists of. Use insecticides on the plants, and put carbolic acid in the water used in cleaning walls, woodwork, &c.

IRIS: *A. O'N.* We know of no variety named *Crichti*.

LEGAL CHARGES: *G. W. E.* It seems to us to be a case in which you would be wise to seek the advice of the Nursery and Seed Trade Association, Ltd., 30, Wood Street, Cheapside, London, E.C., Mr. S. Worrell, secretary.

MEASUREMENT OF THE HEIGHT OF A TREE: *H. C. P.* There are several easy methods: one is to take a yard measuring rod, and at noon, when the sun is shining, hold the rod erect, and measure the length of its shadow, then forthwith see how many times that shadow length will go into that cast by the tree, and the number of times will give you the height in yards. Another method is to make a right-angle triangle of battens, having a line and plummet on one of the right-angle sides, so that the operator may be able to keep the base at right angles to the bole of the tree. Holding this instrument at

3 feet from the ground, step to a point that is approximately the height of the tree, then take a sight along the hypotenuse, or side opposite to the right-angle, and shift backwards or forwards until the two acute angles of the instrument coincide with the topmost point of the stem. The distance from that spot to the base of the stem will be the height of the tree.

NAMES OF FRUITS: *J. J. Pear l'Inconnue.*

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*Blackboy.* *Euryops virgineus*, Less (S. Africa).—*O. P.* *Omphalodes verna*.—*R. E.* *Dendrobium thyrsoiflorum*.—*Lyminster.* 1, *Veltheimia viridifolia*; 2, *Celsia cretica*.—*Tobby, Bristol.* 1, *Adiantum concinnum latum*; 2, *Adiantum scutum*; 3, *Pteris serrulata cristata*, fertile frond; 4, *Adiantum cuneatum mundulum*; 5, *Pteris serrulata cristata*, barren frond; 6, *Lomaria gibba*, fertile frond—the barren fronds usually forming the head of the plants are much broader.—*A. B.* *Laelia anceps* var. *Stella*.—*T. M. C., Preston.* 1, so far as we can judge without seeing the plant is *Laelia flava aurantiaca*; 2, *Odontoglossum crispum*, a very good variety, but not distinct enough for a varietal name; 3, *O. crispum*; 4, *O. crispum*, fine variety; 5, *O. × Adrianae*.—*Constant Reader.* *Ansellia gigantea*, a Natal and East African species.

ORANGE PHOENIX (syns. Incomparabilis plenius, "Eggs and Bacon"): *A. H. K.* Excellent in pots, and may be slightly forced when well rooted.

OVER LARGE TREE FERNS: *P. B.* Sink their roots into the floor of the house if you can, and build a wall of bricks without mortar around the stems a foot distant from them to let air reach them, and keep off any pressure from the earth. If this cannot be done, ring the stems, and keep a quantity of sphagnum-moss bound round them, and maintain this and the stem in a moist state till roots in quantity push forth, when the old rooted butt ends may be severed, and the plants tubbed or potted.

RASPBERRIES: *D. K. L.* As it is the proper practice to cut all newly planted canes of the Raspberry down to a point 3 inches from the ground, and as only the autumn or double-bearing varieties fruit on the current year's growth, you cannot have any fruits from the plants before 1902.

VINES AND VINERIES: *Jno. S.* The first vinery is rightly planted with Black Hamburgs, but might have included either Foster's Seedling or Madresfield Court, or both. Second, Lady Downes' Seedling is improperly planted in this house, and Gros Colman would have been better in a later house; a long period of ripening being required by these varieties. Third vinery seems to be rightly planted, but Black Hamburgs should consist of but few canes. Fourth, Black Hamburgs and Fosters will succeed in the unheated vinery. It is not advisable in a general way to plant Vines that hang for a long time, bloom at different times, or that do not ripen about the same time in the same vinery.

COMMUNICATIONS RECEIVED.—*C. E. W.*—*W. H. W.*—*F. J. C.*—*G. R.*—*C. A.*—*C. D. T.*—*E. C.*—*C. B. Marley*—*Mrs. W. Diver*—*W. C. L.*—*W. Camm*—*A. C. F.*—*E. M.*—*J. W. B.*—*D. R.*—*W. K.*—*R. D.*—*Wild Rose*—*W. M.*—*J. O'B.*—*J. J. W.*—*A. S.*—*C. T. D.*—*A. C.*—*G. H.*—*C. A.*—*W. R.*—*G. R.*—*F. T. C.*—*E. J. W.*—*H. R.*—*J. W. B.*—*Gold Coast*—*G. M.*—*R.*—*Horti.*—*J. W. M.*—*Shropshire Hort. Soc.*—*W. C. L.*—*D. F.*—*J. B.*—*A. L.*, Nottingham.—*O. G. E.*—*H. G.*

PHOTOGRAPHS RECEIVED WITH THANKS.—*J. G.* (Broughty Ferry).

DIED.—March 9, 1900, at 28, Tetcott Road, Chelsea, ROSE, beloved wife of WILLIAM NAPPER, formerly of Exeter Nursery, youngest daughter of the late RICHARD PITTS, of Kenford, Devonshire.

Continued Increase in the Circulation of the "GARDENERS' CHRONICLE."

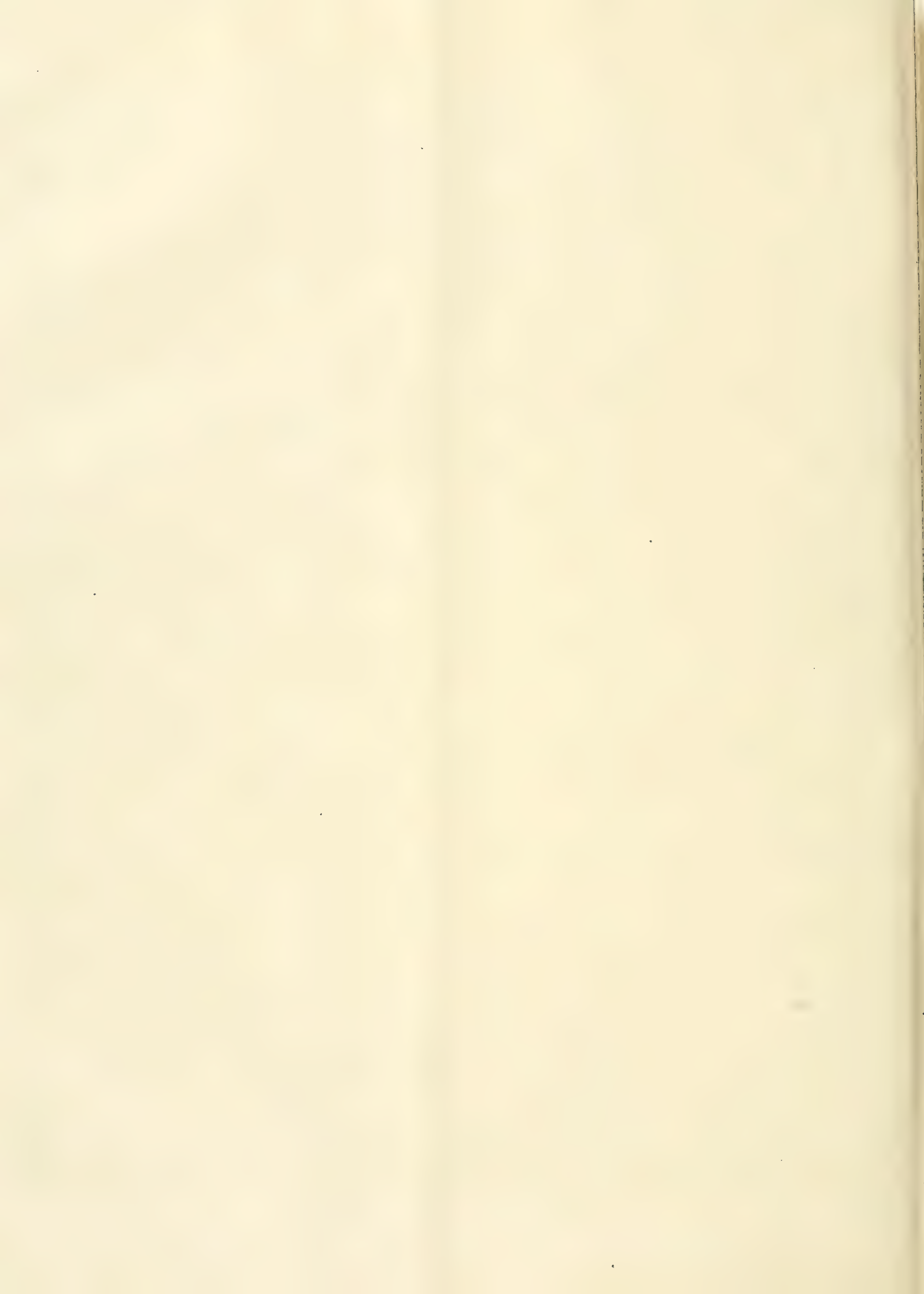
IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

↑ TREBLED. ↓

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, and ALL CLASSES OF GARDENERS and GARDEN-LOVERS at home, that it has a specially large FOREIGN and COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.



CACTUS-HOUSE, HOLLY POINT, HEATON MERSEY.





THE

Gardeners' Chronicle

No. 742.—SATURDAY, MAR. 16, 1901.

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A GARDEN OF OLD-FASHIONED FLOWERS.

IT is a saying of Fleur-de-Lys that all children are born scientists, but that only a small number of them ever pass on to the condition of artists; and it has always seemed to me that there is much truth in the statement. Children are ever putting the eternal "why?" to the great confusion of their parents, pastors, and masters; and it is the curious, the gigantic, the rare, which always calls forth their attention and admiration. Struwpeter is more to a child than all the beauties of a Charles Robinson, and to few men or women is it given to derive as much pleasure from beauty as from that which is usually called "interesting." Hence, the ordinary criticisms of gardens; hence, also, the usual aims of gardeners. So many people desire the gaudy, or the unique, or the curious, that we are apt to look upon gardens merely as appliances for the production of quaint or monstrous flowers.

Now, Fleur-de-Lys has no atom of respect for this attitude. Her object in gardening is to produce a framework of sentiment and continuous beauty, within which she may pass her days. She is not at all flattered if one says immediately on seeing the garden, "What a fine Lilac is that!" or "What very large

Violets!" She does not wish that individual objects, however beautiful, shall thrust themselves forward and focus the attention, but that one shall feel the very breath of beauty itself. We speak of a beautiful woman, a beautiful dress, a beautiful voice, a beautiful poem—but only the professional critics divide up these estimates into components. The first effect of the garden of Fleur-de-Lys is an effect of pure beauty. I remember reading in the course of a translation of an Arabic inscription: "How beautiful is this garden, where the flowers of the earth vie with the stars of heaven!"—and that is the kind of thought which her garden inspires—in me, at all events.

The analysis of beauty has ever a dissecting-room-feel about it, still, as he who would become a skilful surgeon must be first a practical anatomist, and as he who would be a painter must first study his materials and the "dodges" of his craft, so must the would-be artist in gardening dissect the beauty of perfect gardens, and study such apparently dull materials as earth and manure, and practical garden books.

I have said that the beauty of the particular garden of which I am speaking is due largely to the feeling of repose and settle-a-downness which it yields. Every plant looks as though it "belongs" (as we say in Cornwall) to be where it is, as though it always was there, and as though there is no intention of shifting it in a week or two to some glasshouse, store-room, or other site. The plants in most gardens look as though they have merely come to pay an afternoon call, dressed exactly *à la mode*, speaking always "cumeelfo"—like the people of Troy Town, and elsewhere—giving one the certain knowledge that they will only say the right thing, look the right thing, and leave at the right time, unregretted and unmissed. This "comfortably-at-home" effect is produced mainly by three causes—firstly, the presence of abundant deciduous trees and shrubs, giving infinitely various effects of light and shade; secondly, the arrangement of the plants in bold groups of single species; and, thirdly, the provision of each separate plant with depth of suitable soil, and space to develop its individual form. There is plenty of background, and not too much episode.

Country people often think that the way to enjoy London is to spend day and night in one continuous round of "sight" seeing. Hard-up young men have often pictured to themselves the great pleasure to be obtained from infinite and continuous champagne. In like manner, people often have an idea that the perfect garden is a continuous sheet of wonderful flowers. How great the fallacy contained in this idea it should be needless to point out. Leaf and stem, light and shade and fragrance, these are quite as essential parts of a garden as are the "blooms" of the gardening showman.

An eye for beauty is largely a product of training and experience. A soul and a brain there must be as a basis, but "taste" is to a large extent cultivated. One must have read much before one is able to appreciate the style of a Ruskin, or a Pater, a Maeterlinck, or a Le Gallienne; one must have studied many pictures before being able to realise the beauty of the works of the great artists; and in like manner one must needs have loved and watched plants long and steadfastly before the beauty of winter twig and summer leaf comes home to him. Many a man with a garden—such really do not deserve the honoured name of gardeners—looks upon winter as a season to be got

through as soon as possible, as a season when nothing short of necessity shall drag him into the garden.

I am sure that even in the very heart of December, one might find in the garden of Fleur-de-Lys more of real beauty than ninety-nine gardens out of a hundred contain in June. I picture in particular one little heather path bordered by large bushes of blue-grey Lavender and green-grey Rosemary, in the bays being great Mullein plants and clumps of Pink and Alyssum. Ferns, Periwinkles, Holly, Satin-leaf, Hellebores, Winter Aconites, Barberries, these are but a few of the plants which help to make this walk bright and pleasant even in the depths of winter; but most important of all in the Christmas display are the Furzes, single and double, than which, according to Mr. Alfred Russell Wallace, the tropics can produce nothing more brilliant or more beautiful.

Continuous beauty all the year through, rather than a continuous display of flowers, is an aim which other gardeners might imitate, for not only is the result far more restful and suggestive of reserved force and becoming modesty, but also the individual plants are far more likely to have a fair chance of development at the hands of one who appreciates beautiful leaves and healthy growth, than when cultivated by one who looks at plants merely as flower-making machines. *Harry Roberts, Cornwall.*

THE BEGINNING OF THE SPRING.

SINCE last I wrote to the *Gardeners' Chronicle*, Nature has assumed a somewhat different aspect. The frost has disappeared, though its lingering existence is still occasionally felt in the atmosphere; heavy rains have supervened, the grass is greener on the lawns and fields, the virginal leaves of the Woodbine, the most tropical in aspect of all our wild flowers, are visible in the glens; all things that grow and blossom luxuriantly seem to proclaim in Nature's own gentle, unobtrusive manner, the influence of the spring.

The transitions of Nature are so silently effected, that they can hardly be perceived. We have not time to mourn the decay of the beautiful Snowdrop, a miniature Lily in its refinement and tender grace, before the brighter but not more beloved Crocus has appeared. Ere one fair flower has utterly faded, another is ready (like a soldier in some great battle stepping quietly into the position of his fallen comrade) to take its place. And so seemingly infinite are the energies and resources of Nature, that no season of the year, however dark and dismal, is entirely destitute of flowers. In the very heart of winter shines the naked flowering Jasmine, and the snow-white Helleborus niger, the pensive "Christmas Rose." Since December 20 till the present time (March 6), I have had the Snowdrop in exquisite bloom. First came a variety which I believe to be *Galanthus præcox*; immediately afterwards *G. Elwesii*, its slender stalks somewhat inconveniently long, overweighted by its pendulous flowers; subsequently the double varieties, with their artistic central tints of richest green; then, last of all, the great *Galanthus Melvillei*, probably the largest and most lustrous of Snowdrops, raised by Mr. D. Melville, head gardener at Dunrobin Castle, to the Duke of Sutherland.

The season of the brilliant Crocus has come, and several of its loveliest forms are already in bloom. While the yellow and purple varieties are richly effective, the pure white flowers,

which come to us somewhat later, are especially refined. A charming contemporary of the Crocus is *Scilla sibirica*, with its hues of deepest blue. Another of its graceful companions in my garden is *Chionodoxa Lucilæ*, "the glory of the snow," which seldom, even in Scotland, has the elemental or atmospheric experience and environment which its familiar English title implies. Its largest and finest form, which does not flower so early upon the ever-gladdening confines of spring as the variety I have indicated, is *Chionodoxa gigantea*, which however is hardly imposing enough in its dimensions, to be worthy of that name. That it is nevertheless unusually large, and likewise very fascinating, there can be no doubt. There are certain horticultural titles, I may observe incidentally, that I would, for the sake of perfect accuracy, like to see revised. I have in a previous contribution remarked the erroneousness of calling a certain flower that much more nearly resembles an *Anemone*, the Christmas "Rose." There is also a stately Lily which has been termed, with almost equal inexpressiveness, though it does not exist in Northern Africa, the "Lily of the Nile." *Lilium africanum* would be a better name, or at least more legitimate.

A few of my vigorous Lilies of oriental extraction, noticeably the Chinese *Lilium Henryi*, and some early-flowering varieties of *Lilium auratum*, are already manifesting signs of active life. The reign of the Daffodil, with the first appearance of *Narcissus scoticus*, the fair "Scottish Garland Lily," has radiantly begun; and will go on brightening till *Narcissus poeticus* has, with the advent of summer, dawned upon our gaze.

"For winter's rains and ruins are over,
And all the season of snows and sins;
The days dividing lover and lover,
The light that loses, the night that wins;
And joy remembered is grief forgotten,
And frosts are slain, and flowers begotten;
And in green underwood and cover
Blossom by blossom the spring begins."

David R. Williamson, Wigtownshire.

ORCHID NOTES AND GLEANINGS.

Two of the most frequent abnormalities among Orchids consist in the absence of the lip, a condition which has been called "acheilary," and in the reduction of the flower from its normal "trimerous" to a "dimerous" condition. To Sir Trevor Lawrence we are indebted for a series of specimens of *Dendrobium Wardianum* showing lipless flowers, some of which have only two sepals and two petals (dimerous), crossing the sepals at right angles. This diminution or absence of parts is due no doubt to an arrest of development, but what causes the arrest is not known. Some might consider such cases as instances of reversion, or harking back to an ancestral condition. Very likely this is so in the case of regular *peloria*, but in the present flowers such an explanation is more than usually conjectural.

CROSSING AND HYBRIDISING OF ORCHIDS.

One of the difficulties the cross-breeder and hybrid-raiser has to contend with is to ascertain the most suitable period for detaching the pollen. It must be ripe, but not over-ripe, if he is to make sure of perfect pollination, and this condition of the pollen varies in different species. Some pollen is fit for use on the day after the flower opens, as in *Sobralia* and *Stanhoepa*, and the same is true of the condition of the stigmatic surface. In the case of *Odontoglossum* and *Cypripedium*, this mature state is reached on the eighth day. As

a means of ascertaining whether Orchid-seeds are capable of germination, they should be immersed in vinegar and examined under a microscope. Those which possess a living germ then show it as a minute black spot. The best instrument for taking the pollen masses from one flower and conveying it to another, is a thin piece of wood shaped like a knife. *Die Gartenwelt*, January 26, 1901.

LÆLIA JONGHEANA.

This is one of the best plants in flower in gardens at the present season, its large flowers in proportion to the dwarf habit of the plant even surpassing those of *Lælia pumila*. Little was known of the plant for many years after the illustration appeared in the *Gardeners' Chronicle*, 1872, p. 425, and probably few illustrations have been more discussed and commented on. A common remark was that such a flower as is there illustrated would never appear, and the feature generally taken exception to was the band of dark colour running round the margin of the lip. The earlier specimens to flower of Messrs. Sander's importation failed to disclose this distinct feature; but later one displayed the feature, although in a less pronounced degree.

At last one of three grand flowers sent by Mr. H. Brown, gr. to Geo. C. Raphael, Esq., Castle Hill, Englefield, displays the dark crimson-purple, well defined margin of the lip, and other characters originally given even in a more marked degree than is shown in the figure. The flower is 6½ inches across, the petals being over 1½ inch wide. The sepals and petals are of a bright lilac-purple, with a silvery-white colour appearing between the veining. The greater part of the lip is dark orange, seven long and some shorter irregular-edged keels extending from the base. In front of the crest is a narrow white band, and the before-mentioned crimson-purple margin, about an eighth of an inch wide, runs round the whole of the lip. One of the other flowers is much lighter in colour, and has no coloured margin to the lip, and the other is tinged on the margin with pale rose colour. *J. O'B.*

ODONTOGLOSSUM × EXCELLENS AND O. × LOOCHRIEENSE.

THESE two hybrids, from the fact of their being half-brothers, have become somewhat confused in the minds of those who can hardly realise that *O. crispum* and *O. triumphans* grow intermixed in one locality. The proportion of the latter among the former is no doubt very small, or there would be more plants of *O. loochrieense* in the importations from that district; but I should fancy it is greater than that of *O. luteo-purpureum* in the localities, where *O. × Wilckeanum* is the resultant hybrid between it and *O. crispum*.

Till *O. × harvengtense* appeared at the Brussels Orchidee in 1893, and again on February 11, 1894, when it was certified, shown by M. le Comte de Bouzies, I knew of no "excellens" that showed any evidence of aught but *O. Pescatorei* as the white parent. Mr. Rolfe in *Orchid Review*, April, 1894, p. 112, referred this to *O. excellens*, and had justification in so doing (as previously it was considered to be *crispum × sceptrum*), even though it was so round in form for an *O. excellens*.

On seeing the plate of it in *Lindenix* (t. 478), I agreed that it must not be *O. × harvengtense*, as a new synonym was made thereby for what would be a form of *O. Wilckeanum*, yet it was different to all the *O. excellens* I had seen, especially in the general arrangement of the markings, and also in certain appearances that the eye can readily see, but which baffles the pen to describe. We did not at that time dream of *crispum* and *triumphans* growing together, hence did not think of hybrids between them. The mark that struck me as being indicative of something else than "excellens" was the brown on the back of the column. M. Peeters, who imported it, stoutly averred it came out of "Pacho type" *O. crispum*, but we thought that it had been somehow mixed.

On March 24, 1896, Mr. H. T. Pitt showed *O. excellens* Rosslyn var., at the Royal Horticultural Society, when it was awarded a First-class Certificate. It had a strongly-browned column-head, and thereby carried in its face the result of some influence unusual in *O. excellens*. But even then we did not think of *crispum* and *triumphans* growing together; through its having no panduration of the lip, and no expanded blade to indicate *O. Pescatorei*, it seemed a clear proof that the lip of *triumphans* had overpowered that of *Pescatorei*.

Another example appeared at the Royal Horticultural Society, April 7, 1896, as *O. spectabile*, from Mr. Linden, and received an Award of Merit; this again had the un-*Pescatorei*-like lip.

At last a Belgian-raised hybrid, effected by M. Vuylsteke, cleared up the matter. He had crossed *O. crispum* and *O. triumphans*, and produced *O. × loochrieense*. Mr. Rolfe, in *Orchid Review* (Feb., 1898, p. 41, and April, 1898, p. 107), described his two first garden-raised plants.

In 1899, two more natural hybrids were shown, as *O. excellens*, by M. Jules Hye-Leyssen, at the Royal Horticultural Society, each securing an Award of Merit, viz., "Hyeenum," on March 14, and "nobilius" on March 28, both of these being quite distinct from *O. excellens*, each in its lip taking after *crispum* and not *Pescatorei*.

Then gradually the fact became pretty generally known that *O. crispum* had been collected for some time past in a locality far distant from Pacho, where also grew a few examples of *O. triumphans*.

When Mr. W. Thompson, of Walton Grange, showed his European-raised *O. loochrieense* "Canary Bird" at the Royal Horticultural Society on November 21, 1899, it gained an Award of Merit under its proper name, and was easily recognised, being the first artificially-raised one certified. Since then many have bloomed from north to south, and in Belgium, out of importations that are in some cases considered to come from localities that are "true Pacho," where, of course, *O. triumphans* is known not to exist. One most interesting case has been reported to me where both *O. triumphans* and *O. loochrieense* have bloomed from the same importation.

From this importation in question, many forms of *O. × Adriane* have bloomed, and this fact, for future investigation in these newer hybrids, may prove a very important piece of evidence, as the influence of *O. × Adriane*, or its parent *O. × Hunnewellianum*, will ere long be seen and recognised. I have suspected it for some little time past, and perhaps this season may partly prove it.

One instance has already come to light since I wrote the earlier portion of this article, in *O. Adriane* "Mrs. Robert Benson," shown at the Royal Horticultural Society's meeting, February 26, 1901, by Capt. Holford. It had a strong character of something more than *Adriane*—but more of this further possible development anon.

The finest form that I have seen is *O. l. Rochfordianum*, shown by Mr. Rochford at the Royal Horticultural Society on February 12, 1901, when it was awarded a First-class Certificate; it had but three blooms on its small bulb, but they were of immense size, with grand form and colour (and, by the way, it was not a disbud spike). This spike and plant took after the habit of the *crispum* parent.

On the same day Mr. G. Singer, of Coventry, exhibited the var. "coundonense," having a true *O. triumphans* habit, in plant, spike, and bloom; it had a spike 3 feet long of seventeen blooms and buds, which were opening one after another in the same manner as in *O. triumphans*.

At present, the natural hybrids are far finer in marking and form than the garden-raised forms, though the comparison may not be fair, considering the disparity in their numbers; but any equal number of the naturals is better than the artificially raised ones. Why this should be it is not easy to define, as I do not suppose the raiser hybridised poor forms.

There is one natural hybrid which approached so

nearly to *O. triumphans*, that it was certified as *O. t* "King Alfred" when shown by Mr. W. Thompson at the Temple Show, May 31, 1899 (Award of Merit), but I have no doubt that this is a *loochristiense*, as I have blooms of two more that similarly approach the same parent. This can be seen in *O. Wilckeanum*, so much so, that some people say they are *crispum*.

No plant of *O. Pescatorei* has bloomed from the importations that have produced *O. loochristiense*, nor has any plant appeared of *O. luteo purpureum* as yet, and as *O. triumphans* has bloomed, there is no reason to doubt that it is the parent of these natural hybrids, but it does not take all this evidence to prove it, when anyone looks at the bloom.

raised plate so highly developed in *O. Pescatorei*. The column is of smaller build, and has no brown on its back; its wings are small, and entire at the edge. (The only *O. Pescatorei* I have seen with colour on the back of the column is *O. Pescatorei melanocentrum*, which is quite unique.)

O. × loochristiense has a much more massive build; the sepals and petals are generally heavier in character, and of greater substance; there is more denticulation on the petals than in *O. × excellens*, as both parents have it. The lip is never expanded at the apex, but is even sometimes much narrowed and acuminate—this is readily seen by looking at the lips of *O. triumphans* and *O. crispum*, both of which are more or less acuminate—the side-lobes of the lip rise higher, and form a deep channel below the column, whose back is more or less browned, and its wings are emarginate at the least, and sometimes lacerated into points as in a *crispum*. These are the cardinal differences, and the minor ones will easily be acquired by the observer.

I append a list of the natural and artificial hybrids:—

Natural.	
Arddarroch var.	harvengtense
aureum	Hyeatum
Baxteri	King Alfred
coundonense	nobilis
Cypheri	Rochfordianum
Fairy Queen	Rosslyn var.
Golden Empress	spectabile

Artificial.	
Hort. Vuylsteke	Kimberley
" Bond	Golden Queen
Canary Bird	Hort. Ball.

De B. Crawshaw.



FIG. 66.—CATALPA BIGNONIOIDES, SHOWING THE SEED-VESSELS: FROM THE GARDEN OF THE REV. CANON ELLACOMBE.

THE CATALPA.

THIS is too well known to need special mention now-a-days. Town gardeners should, however, specially bear it in mind as one of the very best trees for planting in smoky localities. It is, indeed, one of those trees that it is hard to kill. Our present object in alluding to it is to call attention to the weird appearance presented by its long slender pods when the tree is denuded of foliage. It is only after hot summers that the pods are produced. Our illustration (fig. 66) was taken from a tree in the garden of the Rev. Canon Ellacombe, Bitton, near Bristol.

THE PROPAGATION OF FINE FOLIAGE PLANTS.

(Continued from p. 136.)

DIEFFENBACHIAS.—These may be easily increased by ordinary cuttings and by divisions of the stem, just as *Cordylines* are treated, and the same compost will suit them. *D. Bausei*, *D. picta*, *D. brasiliensis*, and *D. Jenmani*, are all familiar to readers of the *Gardeners' Chronicle*, and no new varieties of any consequence have been introduced for some time.

Heliconia.—No more noble-looking plant could well be found than this when in the best condition. To increase the stock there must be division of the stools. Use similar soil as for *Cordylines*, and cultivate the plants in a position in the stove where bright sunshine will not reach them. *H. aureo-striata* has been familiar to us for some time, but in *H. illustris rubricaulis* we have a plant of much finer marking. Water should not be permitted to lodge in the leaves, but it is essential that the atmosphere of the house be kept thoroughly moist.

Calathea (Maranta).—These are somewhat similar in habit to *Heliconias*, and they require cultural conditions of the same nature. Propagation is effected by division. Very liberal drainage is required, and in potting make the soil well up to the rims of the pots or pans (preferably pans). There is a considerable number of varieties obtainable, some of which are not greatly dissimilar to others.

Though *O. crispum* seems to grow so far northwards that it meets the southernmost plants of *O. triumphans*, it is a fact that in the immense importations of *O. triumphans*, of Van den Bogaerde, Collins, and others, in recent years, no plant of *O. crispum* has bloomed from them. This proves that they were gathered in the true *triumphans* locality where only *O. Pescatorei* grows with it, for it, and *O. excellens* have bloomed from both these lots.

The distinguishing points between *O. × excellens* and *O. × loochristiense* may be shortly summed up thus:—*O. × excellens* is generally smaller in build, and has a less massive form; its lip is the chief indication, being always more or less expanded into a somewhat reniform blade at the apex; the channel is shallower, because the side-lobes do not reach so high towards the column, and very frequently the crest has some of the

Panax.—There are not many varieties of *Panax*, but each of them possesses a graceful habit; and in a collection of fine foliated plants these should not be omitted. They root readily from cuttings, will make roots very readily, and the young plants should be potted into a light compost.

Pandanus.—Any appreciation I may offer to this well known plant will probably be universally endorsed, as it is one that the gardener cannot very well do without. Fresh stock can be obtained by removing the growths that appear near the bases of older plants; this should be done when they are about 3 to 4 inches long, and if they be inserted in small pots, placing them around the margins, they will soon make roots. Select those offsets that have narrowest leaves, as these will make the most ornamental plants. When they have become established, put the plants singly into other pots, using on this occasion and all subsequent ones a light compost with little richness in it. I usually mix a portion of pounded oyster-shells and shell-shingles with some leaf-soil and old Cocoanut-fibre refuse. Perhaps I ought to mention some of the smaller decorative plants, such as the well known *Panicum* (*Oplismenis*) *variegata*, *Fittonia*, *Carex europæa*, and *Carex Victoria*, *Sonerilas*, &c. *J. F. McLeod, Dover House Gardens, Rochampton.*

(To be continued.)

FLORISTS' FLOWERS.

GLOXINIAS.

THE *Gloxinia* is now scarcely so popular as it once was, for its rival the tuberous-rooted *Begonia* has more or less supplanted it—generally, I should infer from the belief that *Gloxinias* are rather more difficult to cultivate, and require more heat than the *Begonia*. Admitting the *Gloxinia* to be the more delicate of the two, the grower is more often at fault than the plant. In growing some hundreds of these plants annually, I have had an opportunity of testing them under various degrees of temperature. Those which are started at this season, with the intention to flower them in the month of May, need a temperature of from 65° to 70°. The plant should have this amount of heat till the middle or end of May, according to the season. Tubers started later, or seedlings for flowering in the months of July, August, and September, are the better for not being grown in so much heat; but should be afforded ordinary greenhouse temperature, a fair amount of shade, with air admitted in moderation, without causing a draught, which is very hurtful. Such plants are sturdy, they bloom well, the flowers are brighter, and insect pests less troublesome, than when grown in higher temperatures. It may be advisable to warm the pipes on chilly nights, but not otherwise. During warm weather, dryness at the roots or in the air is injurious. At the time the flower-buds appear, manure-water is beneficial, and the height of perfection is reached when the foliage is large enough to hide the pot from view; the flowers are then of stout texture and large size, and carried well above the leaves.

THE HOLLYHOCK.

Those who possess a collection of *Hollyhocks* should place them in a light part of a greenhouse or vinery. The *Hollyhock* is regarded mostly as a hardy plant, and therefore not in need of glass protection. I tried, at one time, to treat it as such, but found to my cost that it would not stand severe frosts. Seedlings will pass through a severe winter without harm if they are well established. For instance, sow the seed early in the month of May in a cold frame, or on a gentle bottom heat, to cause a quicker and better germination. When the plants have been pricked out in boxes, and are large enough in the months of July or August, plant them at not less than 3 feet apart, and they will be fine sturdy plants, with the leaves hugging the

ground. Such plants will stand almost any amount of frost. The older plants which have flowered and have been cut down are different. There is an old thick stem on these, with some growths clustering around the neck, and this stem dies down from the top, after exposure to severe frost; and as the outer covering of the stem parts from the woody portion, the growths gradually die with it. A good way to treat old stools of the *Hollyhock* is to dig them up, and plant in an ordinary garden-frame in rich loamy soil, and if some leaf-mould can be mixed with it to keep it open, so much the better. They may be planted quite closely together, and have a covering of litter if very severe frosts set in.

Choice varieties may be potted in 7 or 8-inch pots, according to the size of the stools; and as the object is to obtain cuttings, they can be more quickly obtained from plants that have been wintered in a glasshouse, from which the frost is kept out better than from a frame. When the shoots are strong enough, they should be cut off with a knife close to the main stem, taking a heel of the older tissue as well. Such cuttings form roots freely in a propagating-frame or heated house, but they are apt to rot unless the right method is pursued. Let as many clean thumb-pots be prepared as there are cuttings, and having put a bit of crock over the hole, and prepare some porous soil consisting of one part good loam, one of leaf-mould, and some white sand, all being moderately moist, and plant these cuttings firmly in the pots, but do not afford water; indeed, it is better not to afford any before roots are formed, which is the reason that the soil should be rather moist, for if the pots are plunged in moist cocoanut-fibre-refuse over mild bottom-heat, the moisture will be retained for two or three weeks, as the cuttings are, of course, in a glass-case inside of the house. The frame should not be quite closed, or decay in the leaves and also in the stem may sometimes be set up. It is very essential that decayed parts should be promptly removed when noticed.

Root-grafting may be as successfully practised in the spring, the stock and scion being prepared as if for whip-grafting, and they are carefully fitted, and tied firmly with raffia. A short piece of a root is used for the stock, and in potting the graft, the top of the root must be covered with the soil, which should be the same sandy, light soil as that used for the cuttings. When fairly established, these young *Hollyhock* plants must be gradually inured to the temperature of a cold frame when all danger from frost is over, and repotted into 5 or 6-inch flower-pots. In order that the best results may be obtained, the plants must be carefully attended to, and placed in the open air in April, and planted out where they are to stand to flower about the end of that month or early in the next. The stations or the bed should be prepared in the autumn by being trenched, and heavily manured. In planting either *Hollyhocks* or *Dahlias* where they are to flower, it is better to at once put in the stakes to which they will be secured, it being better for the plants, and a saving of trouble in the end. At the time of planting, make the hole large enough to hold a spadeful or two of a good compost—say, of loam and decayed manure in equal portions, with manure between the first and second spits. Plant firmly, and rather make a slight depression round the plants than a hillock, as in dry seasons water must be afforded.

In new ground that has not had the benefit of trenching, it will not do to throw the subsoil on to the top, but to stir it up, and mix plenty of good manure with it. Many persons do not realise the importance of garden ground being well aerated before being planted with anything, either flowering plants or vegetables. Suppose the ground has been trenched in October or November, it will soon have the surface battered down with the rain, and thus rendered impervious to the air, and weeds will appear on it; and the proper sort of treatment is to fork it over to the depth of 4 inches, and in about six weeks fork it up again; but it is better to let it alone until the surface is fairly dry. It may also

be forked over at the time of planting, and if some decayed manure be placed around the roots of the plants, it will have a very beneficial effect on them. *J. Douglas, Great Bookham.*

CHRYSANTHEMUM MUTUAL FRIEND.

This white-flowered variety is a valuable addition to those that flower late in the season. The flower is of a pure white, and the florets are of good substance, thereby causing it to keep fresh looking for a length of time as a cut flower. The stem is strong and carries the bloom well, making it an admirable variety for filling vases. Early struck plants should be stopped several times, and cuttings rooted in April should be stopped once or twice. If potted in 32's, the plants will carry four good blooms in the month of January, or perhaps later in the winter. I recently saw some good plants in bloom in the gardens at Mill House, Bourne End; and Mr. Nottage, the gardener, spoke very highly of it. *C.*

THE BULB GARDEN.

CROCUS ALEXANDRI.

UNDER the name of *Crocus Alexandri*, a very beautiful *Crocus* was figured and described in the *Botanical Magazine* of October last (vol. lvi., third series, No. 670). The plate was from specimens which flowered in the open ground in the Royal Gardens at Kew in March, 1900. The prettier form shown was one with the outer segments flushed with bright lilac all over the back, with the exception of a narrow band of white round the margin. The other exhibited three feathered lilac stripes on a white ground.

Before I saw this plate and description, I had procured a corm of a *Crocus* which was offered as *C. Alexandria*—apparently a clerical error for *Alexandri*. I was in hope that it might prove to be the plant figured in the *Botanical Magazine*, with the lilac segments with the white margin. My plant has now flowered, and it is different from either of those already spoken of, although still, I believe, a form of *C. Alexandri*. It resembles in general appearance the better of the two figured in the *Botanical Magazine*, but it has the colouring of the outer segments of a deep purple, instead of a bright lilac; it has, however, the white band round the margin, which adds greatly to its beauty. It opened to the sun on February 16, and is a really charming *Crocus*, with this exterior marking and its white inner segments. One is gratified at possessing a new species of *Crocus*. A full account of the species, which comes from Serbia and Bulgaria, was given in the part of the *Botanical Magazine* to which I have already referred. *S. Arnott, Carsethorn, by Dumfries, N.B.*

FORCED NARCISSUS.

When viewed in all its bearings, I think there is abundant food for reflection, and not a little to be gleaned from the rather extensive assortment of forced *Narcissus* staged at a recent meeting of the Royal Horticultural Society. I think too, indeed I am strongly of opinion, that more may be said against than in favour of showing in this way. By some growers of *Daffodils*, it is well known how splendidly some kinds will force into bloom quite early, and again other varieties will defy all attempts in the same direction, that is in so far as coming good or appearing in representative fashion is concerned. All this latter was clearly enough shown in such varieties as *John Bain*, *Princess Ida*, *Empress*, *maximus*, *Figaro*, *Barri*, *conspicuous*, and others; and if the idea was to show how ill-suited are some of these varieties for forcing into bloom in the second week of February, then something has assuredly been attained by the exhibit under notice. There is no more laudable object, to my thinking, than that of helping in so large and ample a way to fill the tables at the Drill Hall at this season of the year, when flowering plants in pots are not over plentiful, and when in

truth not a few possessing such would be loath to take them from home for such a purpose. I know too that upon more than one occasion the same exhibitor has brought collections of plants to the Drill Hall worthy of all praise. In the present instance, however, a much better display could have been made with half the number of varieties, some of which, it was evident, had undergone a severe strain by being brought into bloom so early. It is curious that such late flowering varieties as John Bain, Minnie Hume, and Princess Ida, were made to flower so early, and in company with Golden Spur and Henry Irving, when other and more suitable ones were left out, e.g., Stella, princeps, Ard Righ, and not least the orange-yellow N. Telamonius plenus, when well done. Not one of these was noted, yet each and all are infinitely

and a slightly abnormal bearing of the scape, that may be attributed to the same cause, or this in conjunction with an atmosphere much too dry generally for these plants. Ample moisture is an essential item in the cultivation of Daffodils as pot plants, both in the air and in the soil; and quite half-an-inch of space should be left in a 6-inch pot for affording water.

In some instances, it is said, the flowers do not come so large or good when early forced; and to a certain extent this is true of such as are forced up to and including the first half of January. After this time, however, with the correct treatment and with suitable varieties, the flowers are as large, and when allowed to finish on the plants, often superior to those taken from the open at the natural season. Indeed, with good bulbs, the

Roses is pruned, let a number of mature shoots of middle size, furnished with a heel of older wood, be removed if possible. Shorten these to four or five buds, and insert each in a 3-inch, or five in a 4 inch pot. The advantage is with the small pots, as no disturbance of the roots occurs when repotting has to be done. Plunge the pots in a bottom heat of 75° to 80° under a frame or handlight, and ventilate the same daily between 9 and 11 A.M. for an hour. The top heat must not be higher than 60°, or the buds will start in advance of the roots, and the growth will be weakly. When rooted, inure the plants gradually to the temperature of the house they are in, and pot them when well rooted into 48's, using a rich loamy soil, and keep them in a warm house till the end of May, when they may be put into a disused forcing-frame that has served for Potatoes. When hardened off, plant them on a sunny border in enriched ground, leaf-mould, or mulch with spent Mushroom-bed manure. The after-treatment consists of affording water at the root, syringing the heads in hot weather, and giving an occasional dose of farmyard liquid-manure, or guano, &c. By the end of the season the Roses will have made several strong shoots, 3 to 4 feet long in the stronger varieties, and they may be lifted and potted in pots of a suitable size. They will be ready for forcing into bloom in the winter and spring. The shoots being cut down to about three buds each, the plants will throw up strong shoots from above and below the soil; and after flowering each year they should again be pruned hard, and kept on "the dry side" for a time, and then water applied, when they will break freely. Then is the time to afford them a liberal shift, and to plunge them in a sunny spot out of doors. They will make fine plants to force another year. After-treatment is on the same lines. *Wm. Camm, Abbey Gardens, Battle.*

GREENWAY.

FEW gardens enjoy a more picturesque site than those of Greenway House, the South Devon seat of T. B. Bolitho, Esq., lately Member for the Penzance division of Cornwall, and the birth-place of the celebrated Sir Humphrey Gilbert. The house, surrounded at some little distance by numerous fine trees, stands on a level plateau half-way up a steep slope overlooking the waters of the "silver Dart," here narrowing between wooded banks at the point where the famed "Anchor Stone," theme of many an old-time legend, divides the rapid spring-tide current to right and left, and speeds the dimpling eddies beneath the overhanging boughs to where, on the one hand, the little village of Dittisham nestles amid its Damson-orchards, snowy with unnumbered blossoms in the spring-tide of the year, and on the other along the shore where the tree-embowered lower lodge of Greenway House stands warden over the swaying bell that hangs aloft above the slipway to signal the ferryman across the water. From the Scotch Firs that crown the summit of the hill to the reed-thatched boat-house, by whose arches the river-tides ebb and flow, the grounds, that owe much of their present configuration to the labours of the prisoners of war in the days of the battles on the Spanish Main, are replete with interest and beauty. Screened from the north and east by the lie of the land and by sheltering belts of trees, many tender subjects grow luxuriantly in the open air.

In the "Battery-garden," that doubtless owes its name to the spot having been fortified during the wars of the Commonwealth, when Dartmouth and Kingswear were the scene of a protracted struggle, grows a fine tree of *Guevina avellana*, a native of Chili, 20 feet in height, that bears and ripens its coral-red fruit; and a wall some 10 feet high is bountifully draped with *Trachelospermum jasminoides*, whose growths are thickly starred in August days with a wealth of white, deliciously-scented flowers. Hard by *Berberidopsis corallina* bears its racemes of drooping, crimson flowers as late as November; while a



FIG. 67.—*PHORMIUM TENAX VARIEGATUM*, IN THE GARDEN AT GREENWAY, DEVON.
PHOTOGRAPHED BY S. WYNDHAM FITZHERBERT, ESQ.

superior for early forcing work to those named previously. So much too of the real beauty of the flowers is lost by choosing unsuitable varieties for forcing. As so many amateurs and others are now cultivating these bulbs in pots, I venture to point to what I regard the weak points in the matter, not with any desire to unduly criticise in this instance, but rather to point out the error, and suggest a remedy to afford a means for improvement in the future.

In the first place I noticed the bulbs were large, generally of first size, and as such capable of giving good characteristic blooms. I noted too the pots were disproportionately small, and were overmuch filled with soil; in these circumstances, the thorough watering at the root which these plants must have could not be given at any time, and to these circumstances I attribute the comparatively small size of the flowers. There was apparent that lack of freedom of bursting the sheath,

whole thing resolves itself into one of treatment, which must be liberal from the start. Afforded a good, holding, and fairly sandy loam, and no crude manure, but only a little of that which is well rotted, it is possible to obtain flowers of Emperor, Empress, Sir Watkin, Golden Spur, Henry Irving, Stella, Figaro, Cynosure, albicans, Victoria, Horsfieldi, and obvallaris, as fine in pots in mid-February as at any time of the year. *E. H. Jenkins, Hampton Hill, Middlesex.*

THE ROSARY.

PROPAGATION OF ROSES FOR FORCING.

Now that Roses outside are being pruned generally, I may mention an excellent method by which a stock of young plants for forcing or planting may be worked up. Before a bush for standard

Fan Palm (*Trachycarpus excelsus*) and a fine bush of the Scarlet-flowered Bottle Brush-tree (*Callistemon speciosus*) grow in the same little garden, whose walls through the summer are wreathed in clambering China and Banksian Roses. Other flowering trees and shrubs include a collection of choice *Rhododendrons*, amongst which are *R. Falconeri*, *R. Aucklandi*, and *R. Dalhousiae*; *Eucryphia pinnatifida*, *Clerodendron trichotomum*, over 40 feet in height; *Boronia Drummondii*, *Kœlreuteria paniculata*, valuable alike for its yellow flowers produced during the summer months, and for its bright autumnal tints; *Rhus glabra laciniata*, *Azara microphylla*, 20 feet in height; *Pavia macrostachya*, a beautiful sight in August when covered with its erect spires of ivory-white bloom; *Correa virens*, 6 feet through, bearing its pale green flowers in quantity in November; *Acacia armata*, of which there is a fine bush 7 feet in height and 9 feet in diameter; *Indigofera Gerardiana*, clothed with deep rose flower-racemes in the late summer; *Benthamia fragifera*, that bears a wealth of large, pale yellow flowers in June, followed later on by the crimson fruits that have earned it, in common with *Arbutus Unedo*, the title of Strawberry Tree; the brilliant-flowered *Embothrium coccineum*, well named the Fire Bush, whose blossoms, of a most intense vermilion, render it such a striking object in the late spring, and of which one of the finest examples in this country, about 30 feet in height, exists at Tre-widden, Penzance, Mr. Bolitho's Cornish seat; *Camellias*, *Piptanthus nepalensis*, *Choisya ternata*, *Garrya elliptica*, and many more. Some of the commoner *Rhododendrons* have formed bushes over 20 feet high, *Photinia serrulata* having attained a like stature; while there are fine specimens of Japanese Maples, *Elaeagni*, *Dracena australis*, *Yuccas*, *Bamboos*, and *Phormium*. One splendid example of the variegated form of the latter, that occupies an isolated position at the edge of the lawn, close to a fine plant of *Agave americana variegata*, has leaves fully 7 feet in length, and during the past season threw up fifteen flower-spikes, some of which were about 10 feet in height (see fig. 67, p. 169).

In a little pond Water-Lilies are planted, and in a rock-garden, formed against the face of an almost precipitous slope, many alpine and other rock-plants are successfully cultivated. With the protection of a south wall, *Correa bicolor* and *Poinciana Gilliesii* are grown, and the high walls themselves are covered with attractive flowering plants, some of which are rarely seen in gardens. Amongst these are *Bignonia (Tecoma) radicans*, *B. capreolata*, *B. Cherere*, *B. speciosa*, *Clianthus puniceus*, and its form known as *C. magnificus*, which in the summer veil the walls with sheets of scarlet; the red-flowered *Callicarpa rubella* from China, *Cassia corymbosa*, covering a space of wall 20 feet by 40 feet, and at the zenith of its golden beauty in August, but carrying many of its flower-corymbs well into the winter—a highly satisfactory habit, which is followed by a neighbouring plant of the lovely pale blue *Plumbago capensis*, a subject which succeeds well in the open in some exceptionally-favoured spots in the south-west; *Abutilon vexillarium*, *Solanum jasminoides*, the Pomegranate (*Punica granatum*), *Hydrangea scandens*, *Chorizema*, which flowers in the open in April; *Swainsonia albiflora*, *Elæocarpus reticulatus*, the Mexican *Inga pulcherrima*, bearing scarlet flowers; the violet-purple *Kennedyia nigricans* from Australia, the Chilean *Proustia pyrifolia*, which has annexed fully 20 feet of wall; and *Rosa lævigata*, a cutting from a very fine form of this Rose that covers a large portion of a house at the mouth of the River Dart, and which bears in the early summer a profusion of pure white flowers, 5 inches or more in diameter.

In the flower-garden, bedding and herbaceous plants have their allotted spheres. Rose-arches span a flower-bordered path, and in one portion of the garden the delightful blue of *Commelina celestis*, a perennial introduced nearly 100 years ago,

but seldom met with even where genial climatic influences would permit its surviving the winter, creates a breadth of pure colour.

On a sloping lawn, and at some little distance from the front of the house, stands a noble Oak, whose trunk rises clear for some 40 feet before branching out into an umbrageous head. At one side of the house, on another lawn, a towering Tulip-tree, having a girth of 13 feet 7 inches, rises 70 feet into the air; while on the other side, crowning an eminence, a fine specimen of the Scotch Fir spreads its lofty head of sombre blue-green foliage. Another notable tree growing in the grounds is a grand *Wellingtonia*, about 90 feet in height, with a girth of 27 feet at 1 foot from the soil. Many walks lead through diverse portions of the grounds, some passing between flowering shrubs, some leading beneath the Scotch Firs, and others intersecting slopes of closely-mown lawns, but none can compare for charm with the "river path" that trends downward between the Beech-trunks from the house to the ferry—cool in its grateful shade on the cloudless summer noons—with the bright waters of the Dart shimmering in the sunlight between the grey columns of the tree-boles. S. W. F.

THE WEEK'S WORK.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. I. MEASURES, Esq., Cambridge Lodge, Flodden Road, Camberwell.

Miltonia Roezlii.—The plants of this species being in the same conditions of growth (see previous Calendar) may also require repotting. I find that this species does well in a house having a temperature of 60° to 65°, and 70° max. in the summer months. It is a plant that is much injured by town fogs during the winter months, and it is on that account advisable to get any necessary potting carried out in the early springtime. The compost of which use is made should be similar to that which I recommended for *M. vexillaria*, the pots being well drained and sufficiently large to contain the plants without too much confinement. The plant should live under humid conditions at all seasons, and if a layer of chopped live sphagnum-moss of about an inch thick be placed on the stage on which the plant stands, and this is wetted with rain-water, it soon begins to grow, and moisture is constantly being given off in the vicinity of the plant.

Miltonia Bleuana, the cross derived from *M. Roezlii* and *M. vexillaria*, succeeds best in an intermediate-house. It flowers here earlier than *M. vexillaria*, and is a very desirable variety for its blooms and for its tractability under cultivation. As a proof of this, one of our plants had no fewer than eleven flowers on a raceme last year. This year the same plant has four racemes of three flowers each, which is sufficient to illustrate its free flowering character. The various *Miltonias* mentioned in this and my previous Calendar may be increased by division, and any of the pseudo-bulbs produced behind last season's growth may be removed and potted in small pots and placed in a light position, and afforded water liberally.

Imported Orchids.—During last year and up to the present time importations of *Odontoglossum crispum* have been very rare, and these have not come through the usual agents and collectors, the latter contending that owing to the rebellion, which has been in process nearly two years, it is impossible to procure the true "Pacho" type. A few importations have, however, reached this country, and it is advisable to purchase the plants early in the year; moreover, by so doing the plants have a better chance of forming roots, and thus withstanding the trying conditions of summer heat. It is not always advisable to buy the largest imported pieces, those of moderate size being the more satisfactory; while the small amateur-cultivator should note that, with very few exceptions, the choice and highly prized varieties have appeared among the smallest pieces that were originally purchased, from about a shilling apiece. The plants as soon as received should be put into pots just large enough to contain the plant, and filled to about two-thirds with drainage; or, better still, with a large piece of crock placed over the hole at the bottom, and the remaining portion, so far as draining material is concerned, filled in with bracken roots chopped up, such as discarded when sorting Orchid-peat. The plant being placed in its proper position, the

remaining space should be filled with a compost consisting of about equal portions of turfy peat and chopped sphagnum-moss, and rain-water afforded by means of a moderately coarse rose. The plants, when drained of the water, should be placed in a moist and shady portion of the house.

FRUITS UNDER GLASS.

By MALCOLM MCINTYRE, Gardener to Sir CHAS. TENNANT, The Glen, Innerleithen, Peeblesshire.

Vines—"Bottle" Grafting.—Anyone who desires to change the character of his Vines may easily do so, by the means known as "bottle" grafting, and no time should be lost in making the attempt. Market-growers have learned that the showy or large-berried varieties pay the cultivator best, and Messrs. Thomson, of the Vineyards, Clovenfords, had their large houses of Black Hamburgs and Lady Downes transformed into Gros Colman, by the simple process of inarching and bottle-grafting. The former varieties are amongst the least remunerative. Supposing a house of Hamburgs is in good health, instead of destroying the Vines, it would be better to graft them with Diamond Jubilee, this being an improvement on Gros Colman, or any other variety desired. In this manner the character of a Vine may be quickly changed without the loss of a crop. The Black Hamburg, Lady Downes, and Muscat of Alexandria, are considered by most gardeners good stocks for grafting other varieties upon, but most kinds answer quite as well, and a black variety may be grafted upon a white, and vice versa. The grafting should be done when the stock is growing freely; and the scions, when pruned from the Vines in winter, need to be kept plunged in moist soil in a cool pit till within ten days of the time they are required. By affording them heat during the remaining ten days whilst still plunged in moist soil, the sap will become active, and excite the buds. They may be grafted upon the old rods, or upon well placed lateral growths—the latter are better. First, fit the scion and stock together, then take a slice off the scion near the middle from 4 to 5 inches in length, and a corresponding slice off the stock; "tongue" these, that is to say, cut a little way into the stock in a downward direction, and make a similar incision into the graft in an upward direction, and then place them together, the tongue of the scion being fitted into that of the stock. Bind them neatly and tightly together with matting or raffia, and cover the point of union with grafting-wax or moss. There ought to be about two buds on the graft above the connection with the old Vine, and a length of about 5 inches below. This length of 5 inches should be inserted in a bottle of water slung up to it. Keep this bottle filled with water, and it will support the graft till a perfect union has taken place. If all goes well, the bottles should not be detached, but will soon become full of roots, these absorbing a quantity of water. Strong fruiting-rods usually form in one season.

Inarching is perhaps better known amongst gardeners. It can be done with either ripened wood, or sappy young growth of the current season. In the former case, select rather strong pot Vines on the point of breaking, fit and fasten these to the stock, much as advised in the case of bottle-grafting. Instead, however, of shortening back the Vines to near the point of union with the stock, disbudding ought to be resorted to, or otherwise they will be much weakened by bleeding. Inarching, or uniting growing shoots together, is most practised, and strong pot Vines are best for the purpose, the leading or only shoot on these being united to a lateral growth of nearly the same thickness. It cannot be properly done when the shoots are quite soft, but must not be delayed after they are somewhat set, or very little subsequent progress will be made. Carefully slice out a thin piece of bark on both stock and scion, the inner bark being well reached, then fit the two wounds neatly together so as to make the edges meet properly, bind up tightly with matting, and moss over. The stock and scion will very soon become united, the latter quickly showing signs of increased vigour. Keep the stock stopped at the second or third joint beyond the point of union, and allow the scion to reach the top of the house before stopping. Stout rods from 8 to 12 feet are frequently obtained the first season from inarched shoots. It is quite possible to grow canes by this means large enough to carry two or three bunches the following season.

THE FLOWER GARDEN.

By T. H. SLADE, Gardener to Lord POLTIMORE,
Poltimore Park, Exeter.

Ivies growing on walls should be trimmed in fairly close to the wall or fence, and they quickly get covered with foliage at this season. Ivies recently planted should have the main shoots secured to the wall, and partly cut back; they should be got to adhere to the face of the wall at the very base. If progress has been slow hitherto, the soil doubtless is poor, and some decayed manure is called for in order to promote growth. Rough walls have an attractive look if covered with Irish, Algerian, Regnier's, græca, with pentaphylla or other green-leaved varieties, and gold or silver variegated forms, planted at intervals, care being taken afterwards that the stronger growing varieties do not encroach on the less vigorous forms. Ivy is useful for planting under trees, where grass and other plants die out, or to ramble over dead trees and tree-stumps, or rooteries. Varieties good for planting on decaying trees are Regnier's and arborea. Ivy is sometimes used to form permanent edgings to turf, and to raised or very large flower-beds, but the roots should be confined, or they will starve the occupants of the beds.

Climbing and Creeping Plants.—These are usually bought from the nurseryman established in pots, or at the least they have a nucleus of roots within a flower-pot, and as a consequence it is immaterial what season they are planted. The spring is, however, the best season, growth at the roots and the top beginning without any delay. The species which are found suitable for covering walls having a west aspect are Azara microphylla, A. integrifolia variegata, A. lanceolata or serrata, Calycanthus floridus, or C. præcox, and Carpentaria californica. Ceanothus Gloire de Versailles, C. dentatus, C. Marie Simon, C. Veitchianus, and C. Gloire de Plantieres, Cratægus pyracantha, C. p. var. Lelandi, quick growing, beautiful when berried; and Cydonia or Pyrus in variety. Pomegranate, single or double-flowered varieties, do well on south or west aspects. Others which are not fastidious are Chimonanthus fragrans, Elæagnus of the green and variegated-leaved forms, Forsythia suspensa, and F. viridissima (deciduous), Photinia Benthamiana, Escallonia macrantha exoniensis, and the newer E. langleyensis. Choisya ternata: this is beautifully grown in Devonshire, and is worthy of a wall in colder districts; it transplants well from pots, but we find plants in the open ground of this shrub if left long undisturbed do not like to be disturbed. Wistaria sinensis, quite distinct in its style and in the colour of the flowers; Ceanothus puniceus, very attractive, will grow as a wall plant in favoured situations. Magnolia grandiflora, Exmouth variety, is a grand plant for a wall, and the large creamy-white blooms give off a delicious scent during the summer; it requires plenty of root room, and will soon fill a large space of wall.

THE HARDY FRUIT GARDEN.

By C. HERRIN.

Filbert and Cob-nuts should have surplus wood removed where crowded, and strong growths shortened to a few inches in length. Where Nuts are grown in quantity, the Kentish method is the best. This consists of forming a basin-shaped head on a clean stem a foot or more in height, which allows of weeds and suckers being cleared away from under the branches. The branches forming the head are closely pruned. If male catkins are deficient, those of the common Hazel should be cut, and fixed among the branches for furnishing pollen.

Blackberries.—The cultivation methods recommended for Raspberries are mostly suitable for Blackberries. If the shoots are tied to wooden stakes, they should be stouter than those made use of for the first-named, and 5 feet above the level of the soil. The most trustworthy fruiter is Rubus fruticosus, the common species, which under cultivation produces canes 12 feet to 15 feet in length. The weaker ones should be removed, and four or five strong ones retained, and fastened to a stake and allowed to bend over to the ground, on to which the point should be fixed with a wooden peg, and no shortening of the canes performed. Ample space must be allowed in every direction. Varieties often cultivated in gardens are the Parsley-leaved Bramble, R. laciniatus, and the American Wilson Junr., both of which make strong growth, and require a warm season to set the blossoms and ripen the fruit. These varieties should be planted in a warm place, and treated similarly to the foregoing,

or they may be fastened on a stout wire trellis, to which the long growths may be fastened at full length. Prick up the soil, and afford a heavy mulch of rotten manure before winter.

Strawberry Beds.—Having removed the runners from the plants last autumn, there remains nothing further to be done except to cut off and remove dead foliage or weeds, and before applying a dressing of well-rotted stable manure to all plantations of more than one year's standing. The ground between the rows should be loosened with a draw-hoe, but digging should not be done. Fresh lime and soot, mixed together in equal quantities, should be scattered over the ground and over the crowns of the plants before the dung is laid on the land. The plants that were planted last autumn will have been loosened by frost, and should be made firm in the soil by trampling around them when the soil does not adhere to the shoes. A few days later, if dry enough, the beds may be hoed lightly. Where the planting of beds has been deferred until the present, the ground should be got in readiness, and if it has not been trenched in recent years, it should be dug two spits deep, and a heavy dressing of rotten manure afforded. After allowing it to settle for a week or two, the plants should be set out. The earliest varieties should be planted in the warmest sites, and the later ones in the open quarters, while an aspect facing some point to the north should be selected for the plants that afford the latest fruit. The Hautbois varieties do well on cool aspects, and bear fruit for a long period.

Nailing and Training the Peach.—The buds are swelling fast, even on trees detached from the walls, and the operations of training must be begun. Assuming that pruning and dressing with an insecticide have been carried out, let a beginning be made on a tree by securing the oldest branches in position, and after those are put in place, lay in the younger shoots. If the walls are furnished with wire fixed perpendicularly or horizontally, the tying is quickly performed, taking the precaution to pass the bast, &c., once round the wire before fastening the shoot. The branches and shoots of fan-trained and riders, which are sometimes planted between them temporarily, should radiate round the central point at regular intervals, and be kept to straight lines, or with the slightest droop at the tips; and in securing them, no more ties or shreds should be used than the case calls for, and where a shoot or branch presses against the wire or a nail, a pad of cloth, leather, or india-rubber should be used.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HUSBY PACKE, Esq., J.P.,
Frestwood Hall, Loughborough.

Tree Carnations still in bloom may be assisted by occasionally affording them weak liquid-manure and soot in quantity, just sufficient to colour the water. Let the temperature of the house range from 50° to 55°, with air at all times. Rooted cuttings should be removed from the propagating-frame, and placed on a shelf in the greenhouse. In the course of ten days, pot them into small pots, and gradually inure them to cold frame conditions after root action has become active. These require as much care as Malmaisons.

Camellia plants which may have outgrown their quarters may be severely pruned after flowering is past, endeavouring in so doing to give them a symmetrical shape. Repotting may be attended to as soon as growth begins, making use in this operation of turfy loam, peat, and leaf-soil, with as much sand as the state of the loam and peat seem to demand. All portable plants may be put in a temperature of 60°, and be syringed daily, not being placed out of doors before the flower-buds are visible. As Camellias may not be forced into bloom, the only means of hastening the flowering is to cause early growth to be made at this season.

The Greenhouse.—The plants of Erica, Epacris, Acacia, Bouvardia, and Luculia gratissima, which may have been cut back after flowering was past, may now be potted. The first two require hard peat and silver-sand, well drained clean pots, and to be potted firmly with a rammer. Acacia, Bouvardia, and Luculia succeed when potted in turfy loam, peat, and leaf-soil, with sand as much as may be required to keep the compost porous. Thin out the weaker growths of Chorizemas after flowering, and repot them when growth is renewing. The general collection of Ericas, Pimeleas, Aphelexis, Darwinias, Eriostemons, Correas, Polygalas, Boronias,

Myrtles, Diosmas, &c., and similar hard-wooded species, will require repotting or surfacing as soon as renewed growth is perceived, the operations being carried out before the weather becomes hot and dry. A small quantity of turfy loam may be added to the compost for Myrtles, Polygalas, and Pimeleas.

Achimenes may now be started in shallow pans of loam, peat, leaf-soil, and sand, and a temperature of 60° to 65° afforded them. These plants should be arranged in pots, pans, or baskets, after growth has begun, as by so doing the strongest plants can be so arranged as to give a better appearance by keeping the taller plants in the centre, and graduating them to the edge of pan or basket. If the stock is limited, the young plants may be tipped, and the tips may be propagated. These make useful plants by the end of summer.

General Remarks.—Prick out seedling Gloxinias and tuberous-rooted Begonias into pans filled with loam, peat, and leaf-soil to the rim. Pot off seedlings of Solanums, Mimosas, and Celosias in a mixture of loam and leaf-soil, with some sand added, and place on a shelf close to the glass in an intermediate-house, shading them from the sun's rays. The blinds for the various plant-houses should now be got into position, so that they may be applied in case of need.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bicton,
East Budleigh, Devonshire.

Seakale.—The sets which were prepared in the winter may now be planted on well-manured ground, that has been trenched 2 feet deep. Use a dibber in planting, and make sure the base of the set rests at the bottom of the hole, the crown 1 to 2 inches below the soil. The sets may be put in at 1 foot apart, in rows 2 feet asunder, and when two or three rows have been planted, the ground is raked, so as not to be obliged to trample upon it again. Some gardeners plant the finest of the crowns that have been forced, but cuttings planted in a sunny, open spot, and the preparation of the land what it should be, make the finest crowns. Seakale may also be raised from seed sown towards the end of the present month; but two seasons are required to fit it for forcing. Lily-White is the best variety. Another batch of crowns may now be forced in the open, but less fermenting material will now suffice, and in order to have blanched produce in April, cover the crowns with earth or finely-sifted coal-ashes to the depth of 1 foot.

Main-crop Potatoes.—In many country places this crop is raised on the farm, or at the least, outside the kitchen garden, and the sooner the sets are planted after the middle of March the better. If the land is to be dressed with manure from the farmyard, it should be spread before the ploughing-in is done, pulling it into the furrows with a wood-rake on to the top of the sets. The sets may be planted at 1 foot apart in rows 2½ feet asunder. Early varieties should not be planted for three weeks or a month, unless in very favourably situated gardens.

Asparagus - beds.—The autumn top-dressing should now be dug into the soil with a fork, which must not be used as to touch the crowns of the plants. In the progress of the work the soil should be broken up fairly fine, and in about ten days afterwards, on a dry day, rake the beds smoothly, pulling stones and rubbish into the alleys. Afford a light dressing of salt or of some artificial manure when the shoots begin to show through the surface, applying it in small quantities on three or four different occasions at intervals of fourteen to twenty-one days.

Cauliflower.—A sowing may now be made on a warm border of the Early Forcing, or Snowball, Pearl, and Autumn Giant. Those raised from seed sown in warmth at the end of the month of January will now be large enough to prick out in cold pits or frames, at a distance of 4 inches apart, and near to the glass. Having pricked them out, afford water, and keep close for a few days, applying a light shade when the sun is bright. They may also be pricked out in small pots or deep pans. A light soil should be made use of in any case.

Broccoli for autumn and early winter use should be sown forthwith, and include such varieties as Walcheren, Michaelmas White, Veitch's Self-Protecting, and Early Pezance. Sow these, also Cauliflowers, in shallow drills 12 inches apart, and net the seeds if birds are troublesome.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

(Illustrations. The Editor will be glad to receive photographs of plants, flowers, &c., for publication, and of any other matter that may be of interest to the readers of the Chronicle. The Editor will be glad to receive photographs of plants, flowers, &c., for publication, and of any other matter that may be of interest to the readers of the Chronicle.

Newspapers.—Correspondents should send their papers to the Editor, and not to the Publisher.

Local News.—Our readers will be glad to hear of the progress of the various local enterprises, and of the success of the various local enterprises, and of the success of the various local enterprises.

APPOINTMENTS FOR THE ENSUING WEEK.

THURSDAY, MAR. 21. { Linnean Society, Meeting.
Royal Botanic Society, Meeting.

SALES.

MONDAY NEXT.—Roses and Fruit Trees in variety, Conifers, Shrubs, Azaleas, Palms, &c., from Continent; Lilies, Begonias, Perennials, &c., at Protheroe & Morris' Rooms.

TUESDAY NEXT.—Sale of well-grown Nursery Stock at The Nurseries, Hertford, by order of Messrs. Francis & Co., by Protheroe & Morris.

WEDNESDAY NEXT.—Lilies in variety, Roses and Fruit Trees in large quantity, Begonias, Dahlias, Davallias, Border Plants, Azaleas, Conifers, Rhododendrons, Palms, &c., at Protheroe & Morris' Rooms.—Roses, Begonias, Shrubs, and Border Plants, at Stevens' Rooms, 35, King Street, Covent Garden, W.C., at 12.30.

FRIDAY NEXT.—Imported Orchids, by order of Messrs. F. Sander & Co.; Mexican Orchids and Bulbs, Orchids in flower and bud, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—43°2'.

ACTUAL TEMPERATURES:—

LONDON.—March 13 (6 P.M.): Max. 44°; Min. 3°2'.
March 14.—Cold, easterly wind.
PROVINCES.—March 13 (6 P.M.): Max. 59°, N.W. Ireland; Min., 40°, E. Counties.

The Cherry crop is so important in the county of Kent, that a serious outbreak of disease would be specially disastrous. The Royal Agricultural Society has accordingly done well to circulate a leaflet drawn up by Mr. CARRUTHERS, the consulting botanist of the Society. We extract the following particulars from this document. Down to the present time no specimens have reached us, and one of our largest fruit growers in the thick of the Cherry district recently told us he had not met with it, so that it is to be hoped the disease is not yet widely spread.

"A leaf-disease of Cherries has lately been reported from several orchards in the county of Kent. In the early summer it affects the leaves and fruit simultaneously, rendering the latter unfit for market. In autumn and winter its presence is easily detected. The diseased leaves remain attached to the branches as if the tree had been killed in the full vigour of growth, just as the withered leaves remain on a branch that has been severed from the stem.

"The fall of the leaf in autumn is a normal process carried out by the living leaf, which forms at the point of its attachment to the branch a cicatrix that secures when completed the easy severance of the leaf from the branch, leaving a clean scar. The speedy and fatal injury to the leaf caused by the fungus prevents the formation of this cicatrix, and the leaf remains attached to the tree.

"A further striking characteristic of this disease is the shortening of the branches which bear the diseased leaves. The internodes or joints between the leaves of these branches have not been developed. The year's growth, which should have extended to a considerable length, measures less than an inch. The crowded leaf-bases have each a healthy bud in the axil. The dwarfing of the branch is not due to any attack from a fungus, for no fungus is present in the tissues. The dwarfing is entirely due to the want of food, consequent on the early death of the leaf. That this is the case is confirmed by the fact that some of the dwarfed branches have produced in the following year vigorous normal shoots.

"The disease has been spreading rapidly in Kent during the last few years. The varieties of Cherry-trees that have been reported as specially liable are Waterloo, Bigarreau, Frogmore, Napoleon, Black-hearts, Clusters, and Eltons. Turks and Governor Wood have not as yet suffered much, and English and Flemish Reds and May Dukes have not been attacked, though odd trees of other varieties, such as Bigarreau, growing among them have been diseased. In one orchard the disease attacked "Waterloo" first, soon spreading to other kinds; while at another place this variety had not been affected until last year, and then only the leaves had suffered, the fruit had not been damaged.

"Professor FRANK, of Berlin, has described, in *Gartenflora*, 1887, pp. 2 and 51, a serious injury to Cherry-trees, which, there is little doubt, is the same as the disease that has attacked the Cherry-orchards in Kent. The malady was first observed in the Cherry-orchards of the Altenland on the lower Elbe in Germany about the year 1880, and it soon spread widely. About the middle of June, yellow spots made their appearance on the leaves, and at the same time the young Cherries begin to fail. They are stunted in growth, and the flesh of the fruit forms irregularly, or rottenness sets in so that the Cherries are quite unsaleable.

"The fungus had already been described by AUERSWALD, under the name of *Gnomonia erythrostoma*.

"FRANK traces the rapid spread of the disease in the Altenland to the overcrowding of fruit trees and to the presence of open ditches in the neighbourhood of the orchards causing too much moisture, and so presenting conditions favouring the growth of parasitic fungi. While such adverse conditions should be remedied, he recommends, as the only method of stamping out the disease, the gathering and burning of all diseased leaves, which, he considers, need not be attended with more difficulty than the yearly harvesting of the fruit.

"It is the more essential that steps should be taken for the destruction of the dead leaves because of the abundant presence of the living fungus that has been observed in them. It would be a certain source of danger to the new crop if these active fungi were to be permitted to grow on the dead leaves while they remain attached to the trees. To be efficient, this collecting and burning of the dead leaves must not be done in a solitary orchard here and there, but must be carried out throughout Kent. No doubt this must entail much trouble and considerable expense; but the neglect of undertaking this operation, though costly, means the disappearance of the Cherry orchards of Kent in a very few years. The removal and burning of the dead leaves has been successful on the Continent, and there is no reason why it should not be equally successful in Kent. W. Carruthers, 44, Central Hill, Norwood, S.E."

The quality of seed.

THE evidence given before the committee appointed to enquire into the conditions under which agricultural seeds are sown, and the report of the commissioners, turn mainly on the question whether or no there should be a Government seed-testing station. The committee, as a body, says Yes; two members of it, Sir WILLIAM THISELTON-DYER and Mr. LEONARD SUTTON, say No. On all hands it is admitted that the seed trade is in a very much more healthy condition than it was before the passing of the Seed Adulteration Act. Many of our readers must have personal experience of the thoroughness which the great seed-houses exercise in selecting and preparing the seed for market, and the care and supervision they take in conducting trials in their own grounds, or in the fields where the seeds are grown for them by various farmers. This being so, it is not surprising to find the Commissioners now stating that there is no wide-spread grievance to be redressed. In some parts of Wales and Ireland,

it appears, the seeds are bought from small dealers, who have no special knowledge of their work, but endeavour to supply the demand for a cheap article. It is needless to say that the cheap article often turns out a very dear one in the end; but human nature is pretty much the same in all parts of the Empire, and the temptation of low prices is one to which we all more or less fall victims; so that it is hardly fair to complain of the mote in the eyes of the poor Irish tenant-farmers. Whether or no in Ireland a seed-testing station be needed as a remedy against the carelessness and apathy of the farmer we cannot say, but the Irish Board of Agriculture, whose opinion is all-important in such a matter, favours the proposal.

In this country, considering the pains taken by the great seed firms as already alluded to, and the fact that no complaint is made against them, we do not see the necessity for such a seed station as the committee recommend. The farmer or gardener can easily and should test the purity of the seed supplied to him, and the percentage of good seed, i.e., seed that will germinate. He should need no testing-station to tell him this. But if he is desirous of testing the "genuineness" of the seed offered to him—that is, to ascertain whether it is of a good or of an inferior stock—neither the farmer nor the testing-station can give him the least information till the seed is actually grown and compared in the trial-ground. Messrs. WRENCH, of London Bridge, favour us with a sample of Snow's Winter White Broccoli, a valuable variety, but we do not suppose that even Messrs. WRENCH, with all their practice and experience could distinguish positively between the seed of this variety and the seed of any other variety. It comes to this, that the purchaser, if he is wise, will get his seed from some firm of established reputation, and he will then have an assurance that the transaction will be conducted according to knowledge, experience, and fair dealing. Mistakes will no doubt occasionally occur, but a firm with a reputation to lose will allow for such mishaps and treat their clients equitably. A seed-testing establishment for purely commercial purposes might be established by the trade themselves, who might thus save themselves the expense and trouble of individual testing, but we do not think from a perusal of the evidence that any claim has been made out for Government interference on behalf of the farmer. The Government could do little or nothing which the farmers or the seedsmen cannot do for themselves if they would take the trouble.

An experimental station is another matter. We should be glad to see scores of these all over the country, each with a small trial ground attached. Here experiments and trials of all kinds connected with vegetable physiology and its application to the cultivation of plants useful in agriculture and horticulture could be carried out. The "purity" of seeds, and their germinating power, might be ascertained, and they might be utilised as a final court of appeal in cases of dispute. But in the main these establishments should be scientific, in the first instance, and not only indirectly commercial in their aim. Commerce would eventually profit by the results of the experiments and trials made. While the ordinary seed tests apply to limited existing circumstances, the experiments made in the experiment-stations would contribute to the progress, extension, and advancement of knowledge in future, and would not be limited to the mere application of existing knowledge to the circumstances of the present.

LINNEAN SOCIETY.—On the occasion of the meeting to be held on Thursday, March 21, 1901, at 8 p.m., the following paper will be read:—"On the intestinal tract of Birds, and the valuation and nomenclature of Zoological Characters." By Mr. P. CHALNERS MITCHELL, M.A., F.L.S., &c.

THE SURVEYORS' INSTITUTION (JUNIOR MEETINGS).—The third of four meetings of examinees and students authorised (subject to certain conditions) by the Council to be held during the present session, will take place on Monday, March 18, 1901, when a paper will be read by Mr. L. S. WOOD (Professional Associate), entitled "Income Tax, Schedule A." The chair will be taken at 7 o'clock. All inquiries with reference to the junior meetings should be addressed to Mr. T. G. CHAMBERS, 4, Bloomsbury Place, W.C.

MR. CROWLEY'S LIBRARY.—The library of the late PHILIP CROWLEY, Esq., which is especially rich in valuable natural history books, is to be sold at STEVENS' Rooms, King Street, Covent Garden, on March 26 next.

KEW.—Advantage has been taken of the winter months to do a considerable amount of needed work in the temperate-house, the effect of which will be very apparent in the near future. Six of the large beds in the central structure have been thoroughly overhauled; the soil has been taken away, an efficient method of drainage provided, and fresh soil afforded. Most of the large specimen plants have been lifted, so that they may be grouped more effectively, and each has been afforded the necessary space for further development. There remain several beds to be treated similarly, but the work will not be commenced until October next, it being impossible to carry out such operations during the summer months. When this has been done, and the process of re-roofing completed, the old temperate-house will compare in appearance with its newer wings or annexes. At the present time the Acacias are in bloom, and many of the specimens have a very effective show. Amongst others we noticed *Acacia longifolia*, *A. verticillata*, *A. dealbata*, *A. Drummondii*, *A. hastulata* (not perfectly in bloom), *A. vernicidua*, *A. acinacea*, with very slender growths of gracefully drooping habit; *A. leprosa*, *A. linearis*, flowers nearly white; and *A. pubescens*. Among other plants in flower in the large building or its lateral additions are *Pittosporum revolutum*, with somewhat inconspicuous yellow flowers, axillary and terminal; *Kerria japonica*, single and double-flowered varieties; *Cestrum* (*Habrothamnus*) *elegans*, *Chorizanthe varium*, *Hovea lanceolata*, with small, rich, violet-coloured, pea-like flowers; *Camellias*, *Senecio grandifolius*, a magnificent species for such a structure, raising its giant heads of orange-coloured flowers 10 feet or more high; *Cytisus filipes*, a slender-growing species with tiny white flowers, forming beautiful sprays, fine for florists' purposes; *Calceolaria fuchsifolia*, bearing considerable resemblance to a *Fuchsia* when not in flower; and *Rhododendron præcox*, the first of the species to come into bloom. In the "Mexican" division of the house most of the beds have been renewed, and a commencement has been made to plant a fine bank of the greenhouse *Rhododendrons*, in which Messrs. VEITCH'S valuable hybrids will find a place. The *Strelitzia reginae* is blooming in this division, and *S. r. citrina*, a plant brought from the Cape by Mr. WATSON in 1887. Its flowers are pale yellow and blue instead of reddish-orange and deep purple, as the type. *Begonia Gloire de Lorraine* has bloomed for the most part of the winter in a basket in this division, and is still bright and attractive. *Acokanthera spectabilis*, or *Toxicophloeas* as it is known in gardens, is in bloom, and *Brunfelsia* (*Franciscas*) *eximia*, which *Index Kewensis* records as synonymous with *B. macrophylla*. The *Begonia* house in the T range is extremely gay, many species and varieties being in bloom. Not the least graceful

of these are *B. manicata* and *B. manicata aureo-maculata*, with their slender, many-flowered inflorescences; but the showiest plants are *B. Gloire de Lorraine*, *B. Gloire de Sceaux*, and *B. x President Carnot*. *Prunus Davidiana*, out-of-doors near to the temperate-house, was in full bloom more than a week since.

IN THE ORCHID HOUSES AT KEW.—The following species and varieties, amongst others, were noticed to be in bloom a few days since. *Dendrobium Pierardi*, *D. nobile* *Ballianum*, *D. n. Sanderianum*, *D. Leechianum*, *D. x Alcippe*, *D. Wardianum* *Lowii*, *D. Ainsworthii*, *D. Dominianum*, *Eria flava*, *Phaius x Cooksoni*, *P. tuberculatus* (true), from Madagascar, *Epidendrum Stamfordianum*, *E. fragrans*, *Oncidium tigrinum unguiculatum*, *O. excavatum* var. *aurosus*, *O. serratum*, *Vanda Amesiana*, *V. suavis*, *Cymbidium Lowianum*, *Cattleya labiata*, *C. Loddigesii*, *Coelogyne cristata*, *Maxillaria picta*, *Laelia harpophylla*, *Odontoglossum pulchellum*, *O. Halli*, *O. triumphans*, *O. crispum*, *O. Andersonianum*, species of *Phalenopsis*; *Moorea irrorata*, *Tetramica bicolor*, *Bletias*, *Ærides vandarum*, succeeding admirably upon a raft; *Zygopetalum crinitum*, *Sophranitis grandiflora*, *Cochlidia vulcanica*, *Masdevallia Chimæra*, and *Satyrium cucullatum*.

ENGINE SPARKS BILL.—The Compensation for Damages to Crops Bill has been read a second time in the House of Commons by a majority of 227. Allowing that the railway companies are in some instances responsible, *Herapath's Railway Journal* points out that fires are often caused accidentally or maliciously by careless tourists or tramps. Who is to distinguish in these cases between a fire caused by a lighted spark from a passing engine, and one which originates in the manner alluded to? Our contemporary conjures up an alarming increase of compensation claims against railways if the Bill passes, but hopes it may be amended in Committee. It is to be hoped that the interests of nurserymen and farmers will be equally taken into consideration.

A PROPOSED NATIONAL SWEET PEA SOCIETY.—There seems to be a probability that a Sweet Pea Society will be established in the near future, and the work is likely to be undertaken by the Committee of the Bi-centenary Celebration of last year, with the addition of the promoters of a meeting held at Winchester House on Tuesday last. Mr. WATERER, who took the chair, explained the circumstances of the case, stating that the promoters had not the slightest intention to cause friction or permit friction between themselves and last year's committee, and after the reading of a number of letters (most of which expressed sympathy with the idea of inaugurating a Sweet Pea Society), and of the correspondence between Mr. WILKINS and Mr. R. DEAN, the Chairman announced that Mr. GORDON had invited the promoters of that meeting to meet the Bi-centenary Committee on Monday next. Consequently they would consent to an adjournment. The meeting then resolved upon the proposition of Mr. SCRUTTON, that "It is desirable to form a Sweet Pea Society." "To the contrary" there was only one hand held up; but there were several abstentions. Altogether there were in the room twenty-eight persons. It was also agreed that the promoters should attend and confer with the Bi-centenary Committee upon the subject. Mr. H. J. WRIGHT then proposed the following resolution, of which he had given notice: "That this meeting be adjourned until Tuesday, March 26, in order that the question of a Sweet Pea Society may be fully considered in all its bearings." The motion was carried.

AMARYLLIS.—We are informed that a large and fine display of these plants, now known as *Hippeastrum*, from Capt. HOLFORD's garden at Weston-birt, will be made at the next meeting of the Royal Horticultural Society, on March 26.

NATIONAL AURICULA AND PRIMULA SOCIETY (SOUTHERN SECTION).—This Society's annual report and balance sheet shows a balance in hand of £19 17s. 6d. An exhibition will be held on Tuesday, April 23, at the Drill Hall, Buckingham Gate, in connection with a fortnightly meeting of the Royal Horticultural Society. The Secretary is Mr. T. E. HENWOOD, Auricula Villa, Hamilton Road, Reading.

RELAXATION FOR WORKING GARDENERS.—It always affords us gratification when we observe a greater tendency on the part of the proprietors of gardens, or other employers of garden labour, to recognise the need of young men for some opportunities for relaxation. Whether the time be spent in rambling over the country with a view to increasing their knowledge of British plants, or even in the enjoyment of the pleasures of the cricket or football field, gardeners have a right to some time at least when they may alternate their usual work with some other form of employment. It is satisfactory, therefore, to announce that Messrs. W. CLIBRAN & SON, of the Oldfield Nurseries, Altrincham, have just decided that work in their establishments shall cease each Saturday at 1 p.m. instead of 4 p.m., only sufficient men being retained after the former hour to discharge duties that cannot be postponed. The alteration will affect about 300 hands.

INSURANCE AGAINST LOSS FROM WET WEATHER.—The National Rose Society has, or is about to, insure with Lloyds, for the purpose of protecting themselves against loss in the event of the weather proving wet during the day on which the show is to be held in the Temple Gardens. A rain-gauge is to be set up, and if the rainfall is proved to exceed a certain amount, the Society will be guaranteed against loss. Of course the average number of rainy days in July, and the average rainfall in London in that and other months is fairly well established, so that the element of chance is to a considerable extent eliminated.

ROSE SHOW FIXTURES IN 1901.—The following dates of Rose exhibitions, or those in which Roses will take a foremost place, are kindly furnished by Mr. EDWARD MAWLEY, of Rosebank, Berkhamsted:—June 12 (Wednesday), York (three days), Colchester; June 26 (Wednesday), Richmond, Surrey (N.R.S.); June 29 (Saturday), Canterbury and Windsor; July 2 (Tuesday), Drill Hall (R.H.S.) and Southampton (two days); July 3 (Wednesday), Hanley (two days), Croydon; July 4 (Thursday), Temple Gardens (N.R.S.), Norwich; July 9 (Tuesday), Gloucester, Harrow, and Wolverhampton (three days); July 10 (Wednesday), Worthing, Great Stamburgh; July 11 (Thursday), Bath, Brentwood, Eltham, Helensburgh, and Woodbridge; July 13 (Saturday), Manchester; July 17 (Wednesday), Ulverston (N.R.S.), and Cardiff (two days); July 18 (Thursday), Halifax; July 20 (Saturday), Newton Mearns; July 23 (Tuesday), Tibshelf. The above are the only fixtures definitely arranged that have as yet reached us. We shall be glad to receive the dates of other Rose shows (or horticultural exhibitions where Roses form a leading feature) for insertion in future lists.

NATIONAL CARNATION AND PICOTEE SOCIETY (SOUTHERN SECTION).—The twenty-fourth annual report of this Society shows that there is a balance on the right side of £174 10s. 1d., but this, as against a balance of £229 10s. 10d. at the end of the year 1899. The schedule of prizes to be offered at the forthcoming exhibition, which will take place on July 19, at the Crystal Palace, is much the same as that of last year, but two prizes have been added to the class for "table decorations." In conjunction with the annual report there is published a select list of varieties of yellow-ground Picotees and fancy Carnations. The President, Mr. MARTIN R. SMITH, continues to do very much

for the Society, and presents a packet of his choice Carnation seeds to every member. The Secretary is Mr. HENWOOD, Auricula Villa, 16, Hamilton Road, Reading.

THE SHROPSHIRE HORTICULTURAL SOCIETY has issued its schedules of prizes to be offered at the two exhibitions that will be held at Shrewsbury during the present year, upon April 10 and August 21 and 22. There are two "group" classes, in each of which the sum of £60 is offered in prizes; and a like sum is provided for in the class for twenty stove and greenhouse plants. There is a somewhat similar class that calls for thirty stove and greenhouse plants, in pots not exceeding 10 inches, a class in which effective staging is to be taken into consideration. A first prize of £20, and others of proportionate value, are offered for this. The remaining classes for plants do not appear to differ materially from those of last season. In the section for cut flowers, we notice that there has again been arranged a very important class for a display of floral designs on a space 12 ft. by 5 ft., a sum of £37 being offered to competitors in this class. There are several good classes for Dahlias, as well as for Roses, Asters, Pelargoniums, Carnations, Gladioli, Gaillardias, and Sweet Peas. The most exciting competitions at Shrewsbury are always those in the principal fruit classes, and it is evident that this will again be the case in August. He will be a proud man who wins the class for twelve bunches of Grapes in four or more distinct varieties, for which prizes are offered to the value of £50. In the following class, for a decorative exhibit of fruit to be displayed upon a space of 8 ft. by 4 ft. 6 in., the prizes offered are the same as in the class for Grapes; and another important fruit class is for a dessert table of fruit similar to those we have already seen at Shrewsbury. It is satisfactory to note that in the three classes for collections of fruit to be staged with decorations, the fruit itself will again be judged from the standpoint of quality only, and the decorations will form a competition in themselves. The Society has a number of classes for vegetables, and there are also valuable special prizes offered by various seed firms. Altogether the cash prizes offered exceed £1,000. Intending exhibitors must correspond with the well known and energetic Secretaries, Messrs. ADNITT and NAUNTON, on or before August 14.

THE BROCCOLI SEASON IN WEST CORNWALL.

—West-country farmers and market-gardeners have, says the *Cornishman*, much to complain of in respect of this year's Broccoli season, inasmuch as it is the worst for the last ten or twelve years. The yield has, if anything, been slightly in advance of last year, when it was prolific, upwards of eight or ten special trains daily leaving West Cornwall freighted with hundreds of crates of Broccoli. But, to say the least, this year, so far, has proved almost a blank as far as prices are concerned, and has engaged the serious consideration of all growers of the popular vegetable. A year ago there was quite a boom in Cauliflowers; indeed, all who traded in them did so at a good remuneration. This being the case, acres of Cauliflowers were grown this year, but, unfortunately, the result has been almost nil, there being no sufficiently remunerative demand. An explanation of this might probably be found in the fact that, owing to the mildness of the winter months, up-country farmers have been able to grow large quantities of greens, the disposal of which crippled the sale of the Cornish Cauliflower. In numerous instances some growers have had to forward money in order that their crates might be returned; while others, recognising the uselessness of sending their crops up the line, have allowed them to remain in the land—they would not pay for removal. People not in the trade are apt to forget that every crate of Broccoli costs from four to five shillings to send to the London and principal provincial markets in the way of carriage, portage, and commission, so that if Broccoli in London, Birmingham, Manchester, Newcastle, and Glasgow

realise 6s. a crate, the grower's remuneration is perhaps 1s. or 1s. 6d. on each crate. This year hundreds of crates have been sold at the rate of 5s. and 6s. each, thereby allowing little or no profit for the producer. This week one of the largest buyers in Birmingham, in a letter to a local grower, says that trade is very bad, and this, coming from one well calculated to judge, speaks for itself. There have been instances in which crates have realised 12s. and 15s. each—a very good price; but where fifty crates are sold at such a remunerative figure, hundreds of others scarcely paid carriage. At present the outlook is anything but rosy, but it is hoped that ere long matters will improve, and that growers of Broccoli in the west of "the garden of Cornwall" will be amply compensated for any losses they may have already sustained.

STOCK-TAKING: FEBRUARY. — The monthly record by the Board of Trade shows an increase in the imports for the month of February, and a decrease in the value of the exports. The value of the former was £39,714,439 against £37,644,808 for the same period last year, or an increase of £2,069,631 (= 5·5 per cent.). The annexed figures may here be noted:—

IMPORTS.	1900.	1901.	Difference.
	£	£	£
Total value ...	37,644,808	39,714,439	+2,069,631
(A.) Articles of food and drink—duty free ...	11,081,019	13,472,127	+2,391,108
(B.) Articles of food & drink—dutiable ...	2,014,282	1,917,680	—96,602
Raw materials for textile manufactures ...	7,864,474	7,657,682	—146,792
Raw materials for sundry industries and manufactures ...	3,562,842	3,185,406	—427,436
(A.) Miscellaneous articles ...	1,303,107	1,388,060	+84,953
(B.) Parcel Post ...	89,392	110,182	+20,790

We turn to the supplies of fruits, roots, and vegetables, concerning which we give the following figures—all now expressed in hundredweights, excepting Bananas, &c.:—

IMPORTS.	1900.	1901.	Difference.
	Cwt.	Cwt.	Cwt.
Fruits, raw:—			
Apples ...	161,729	166,577	+4,848
Apricots and Peaches ...	56	164	+108
Bananas... bunches ...	89,400	87,125	—2,284
Grapes ...	637	806	—21
Lemons ...	109,915	85,978	—23,967
Nuts—Almonds ...	6,232	6,726	+494
Others, used as fruit ...	18,827	25,856	+7,029
Oranges ...	778,738	638,306	—140,432
Pears ...	1,192	667	—525
Plums ...	158	106	—52
Unenumerated, raw ...	4,681	6,144	+1,463
Dried fruit:—			
Currants, home consumption ...	69,391	53,702	—15,689
Raisins, do. ...	15,398	16,653	—1,484
Vegetables, raw:—			
Onions ... bush. ...	619,005	650,948	+31,943
Potatoes ... cwt. ...	328,263	382,772	+54,509
Tomatoes ...	38,420	36,310	—2,110
Vegetables, raw, unenumerated ... value	£53,743	£25,960	—£27,783

The figures for dried fruit bear out the anticipations of the exporters, and noted in our pages at the time. It is a pity we cannot get more comprehensive details under "Vegetables." The value of the imports for the past two months show a gain of £3,501,233 over the amount for the same period last year. Finally, the—

EXPORTS

foot up at £21,037,455 against £23,219,849 for the same month last year—a decrease of £2,182,394.

We are met here by the statement that the death of our Queen and the attendant obsequies played sad havoc with both home and foreign trade, so that a comparison is out of the question. In the sections of the returns devoted to exports, six show a decrease—five an increase. Next month's returns may show if the statement as to derangement is correct. The figures for the two months show a decrease of £1,012,545, as compared with the same period last year.

THE BRIGHTON AND SUSSEX HORTICULTURAL SOCIETY.—This society will hold its spring show on April 16 and 17, a summer show on August 27 and 28, and an exhibition of Chrysanthemums on November 12, 13. The schedule of prizes to be offered at these exhibitions is accompanied by a card-syllabus of the monthly meetings to be held by the society, at which papers upon horticultural subjects will be read and exhibits of horticultural produce made. The secretary is Mr. J. THORPE, 53, Ship Street, Brighton.

PUBLICATIONS RECEIVED.—*Transactions of the Massachusetts Horticultural Society*, for 1900, part 1: this includes lectures by Professor Byron Halsted, on Ruats of Horticultural Plants; by O. B. Hadwen, on a Half-century's Experience with Ornamental Tree Planting; by Miss Mira Dock, on Procession of Flowers in Pennsylvania; by John Farquhar, on Gardens, Fields, and Wilds of the Hawaiian Islands; and kindred communications.—From the U.S. Department of Agriculture, Division of Vegetable Physiology and Pathology, Bulletin No. 21, *Two Diseases of Red Cedar*, caused by *Polyporus juniperinus* and *Polyporus carneus*, a preliminary report, by Hermann Von Schrenk; and No. 27, *Wilt Disease of Cotton, and its Control*, by W. A. Orton.—From the University of California, College of Agriculture, *Report of Work of the Agricultural Experiment Station of the University for the year 1897-98*; a record of much important work carefully chronicled and now issued with explanatory illustrations.—From the Royal Botanic Gardens, Ceylon, Circulars, series i., No. 18, July, 1900, *Selected Trees suitable for Shade, Wind-belts, Timber, and Fuel Reserves*, &c.; No. 19, *Caterpillar Pests of the Tea Plant*; and No. 20, *Canna*, or "Indian Shot;" the two former by Mr. E. Green, Government Entomologist; the last by Mr. H. Macmillan, Curator.

ADONIS AMURENSIS.*

THIS is a very elegant spring-flowering perennial, 12 to 18 inches high, with elegant, tripinnately cut leaves and flowers as large as those of a Globe-flower (*Trollius*), yellow, the sepals flushed with brown along the nerves on the under surface. It is a native of the valleys of the Amoor, and is cultivated in Japan, where many varieties have been selected (see Hemsley, in *Gard. Chron.*, October 22, 1887). It was originally described by Regel, and has since been figured in the *Botanical Magazine* (1896), t. 7490. Our illustration (fig. 68) was taken from a plant exhibited by Messrs. Wallace & Co. before the Royal Horticultural Society on February 26.

PLANT PORTRAITS.

PRIMULA ELATIOR VAR. GIGANTEA.—*Die Schönsten Stauden*, Lief 9.

ROSE E. VON KESSELSTADT, T.—*Rosenzeitung*, February.

ROSE QUEEN OF ENDELEY.—*The Florists' Exchange*, Feb. 2.

ROSE SOUVENIR DE CATHERINE GUILLOT.—*Moniteur d'Horticulture*, February.

ROSE SOUVENIR DU PRESIDENT CARNOT.—*Moniteur d'Horticulture*, February.

ROYENA LUCIDA.—*Id. Select. Horti. Thencensis*, t. 48.

REDHECKIA MAXIMA, R. SPECIOSA, R. LACINATA, and R. FULGIDA.—*Die Schönsten Stauden*, Lief 9.

SCAEVOLA CAUCASICA.—*Die Schönsten Stauden*, Lief 6.

SHEPHERDIA ARGENTEA.—*Id. Select. Horti. Thencensis*, t. 50.

TROLLIUS ASIATICUS and T. EUROPEUS.—*Die Schönsten Stauden*, Lief 7.

VELLA SPINOSA.—*Id. Select. Horti. Thencensis*, t. 45.

VIOLA CORNUTA, FORMS OF.—*Die Schönsten Stauden*, Lief 9.

* *Adonis amurensis*, Regel and Radde, in *Bull. Soc. Nat. Mosc.* (1861), ii., 35, t. 2, f. 2.

HOME CORRESPONDENCE.

AN INTERNATIONAL HORTICULTURAL EXHIBITION.—Whatever may be the intentions of the Council of the Royal Horticultural Society in relation to its celebration of the centenary of its existence, certainly with the horticultural world generally, one great object desired is the holding of a grand international horticultural exhibition in London in 1904. The present generation of horticulturists cannot well remember that superb exhibition of 1866 at South Kensington—a show such as has had no compeer since that date, beautiful as the Temple shows are. That show will in 1904 have been held thirty-eight years previously. But much as such a grand exhibition has been and still is desired, the great difficulty to be overcome has been in finding a suitable site. May I suggest

derived in the line I mention would be practically nil outside a radius of say 20 miles from where the trial ground was situate. After some forty-five years' practical experience in different parts of the country, nothing is more clearly fixed on my mind than this, viz., hardy fruits that do well in one district do not necessarily do so in all. I expressed a somewhat similar opinion in your columns some years since. Further experience has confirmed it. For instance, what guide for us in Yorkshire would a trial of late dessert Pears be if conducted within 20 miles of London? The same argument would hold good for other counties much nearer thereto than we are. Very fortunately many owners of gardens read your pages nowadays. Nothing can be more misleading to them than to have the idea put into their minds that certain fruits which do well in one district are sure to do so in all. Many know this is not so, but others with less experience

not many miles away, and other Grapes did well there. In making these remarks, I am not wishful to even try and check the onward and upward progress of the Royal Horticultural Society. Far from it. Those who know my worst faults will give me credit for having too great a love for the progress of horticulture generally to think even of this. *Henry J. Clayton, Grimston Gardens, Tadcaster.* [It must not be overlooked that one object of the trial garden at Chiswick is to secure the means of comparison and correct nomenclature, and to illustrate types of fruits, flowers, &c. The question of quality is, in this case, of subordinate importance. Ed.]

A BLUE-FLOWERED PRIMULA STELLATA.—Among a houseful of Primulas at Stoke Park, I noticed several plants of the true stellata type, with flowers of a nice blue tint, and leaves of a green colour. This seems to be a new colour in this section of Primula, the flowers of which have the attribute of keeping fresh-looking for a long period of time after removal from the plants. *C. H.*

LATE PEARS.—Your interesting correspondence of different dates has been under comment here, but I note that no correspondent has given the name of a really reliable January, much less February, Pear. Perhaps it would interest your readers if I gave the names of a few late varieties grown in this garden, and the dates of ripening:—Ne Plus Meuris was ripe on November 17, Olivier des Serres (although left on trees till October 12) on December 14, Easter Beurré on December 20, Bergamotte D'Esperen on January 2, Glout Morceau is usually over by the end of the month of November. These Pears are grown on walls having east and north-west aspects. Referring to Mr. Turton's note of January 19 concerning Charles Ernest Pear, I may mention that a tree of that variety was planted here in November, 1897, against a wall with a north-west aspect, together with trees of Josephine de Malines, Hughe's Prince of Wales, Prince Consort, Pitmaston Duchess, and Doyenné du Comice, all of which have fruited; but Charles Ernest has not shown a fruit-bud till this season, from which it appears not to be fruitful in the young state. *William H. Perkins, Surrey.*

I note that your correspondent, "F. Q. C., Lifton Park," p. 144 of the *Gardeners' Chronicle*, mentions Beurré Rance as a good late variety, and with him of good flavour. Pears, as we all know, vary considerably in quality in many gardens, but I fear there are not many gardeners who can endorse his opinion of the good quality of Beurré Rance. We have it here on a south wall, and it is a shy cropper, and the fruits are only fit for stewing, and even then cannot be compared with the best stewing Pears. It is certainly a late Pear, but the flesh is woody. The purpose for which I have found it useful is wherewith to win prizes at shows! I may add there is nothing to complain of in its outward appearance, as in these gardens it comes of good size and colour. It would be interesting to know upon what stock "F. Q. C.'s" trees are growing, and the kind of soil at Lifton. *T. H. Slade, Poltmore.*

WHY NOT HAVE A NEW VEGETABLE?—In the *Revue des Cultures Coloniales*, Aug. Chevalier has recently described a new species of *Brachystelma* (B. Bingeri), which is known by the name of "Fikongo" in the region of the Upper Niger, and is used by the natives as food when their stores of Millet and Rice are becoming exhausted in the months of May and June. This brings to my recollection that many, and probably all, of the species of *Brachystelma* are eaten by the natives of the various parts of South and Tropical Africa, over which the members of this genus are widely spread. They all have fleshy, tuberous rootstocks, which vary from 1 to 3 inches in diameter, and are turnip-shaped, globose, or oblong. Some of the dwarf succulent species of *Euphorbia* in South Africa also have fleshy, tuberous rootstocks, which are eaten by the Hottentots and Kaffirs, for although the green above-ground portion of the plant may be poisonous, the tuber [when cooked] is wholesome, but has a slightly bitter taste. Now, I think it may be safely assumed that what a Negro or a Hottentot can eat would not be harmful to Europeans, however unpalatable it may be to our epicurean tastes. Still, all things have a beginning, and if we cast our thoughts upon such articles of our diet as Celery, Turnips, Parsnips, and Carrots, and contrast the parts eaten of these vegetables as they



FIG. 68.—ADONIS AMURENSIS—HARDY PERENNIAL: FLOWERS SHINING YELLOW, SEPALS FLUSHED WITH BROWN ON THE UNDER SURFACE. (SEE P. 174)

What with the kind offer of the Earl of Ilchester in mind, mentioned at the recent annual meeting of the Society by Sir Trevor Lawrence, to place Holland Park at the disposal of the Council for shows should the Temple Gardens fail them, is not the difficulty of site fully overcome? What a splendid place for such a purpose would Holland Park be! It is placed in the middle of a great residential district, very accessible from all parts of the Kingdom by several lines of railway, and close to great thoroughfares. Surely, if the Council were to entertain this suggestion, and would obtain Lord Ilchester's consent for the object named, and would organise a guarantee fund of some £5000, itself guaranteeing one-half that amount, the thing might be done. But it is a matter that needs long consideration. *D.*

ROYAL HORTICULTURAL SOCIETY'S TRIAL GROUNDS.—Without entering on the general question as to the necessity for the above Society to have a trial ground, I must say that far too much is made of the advantages to be had with, say, hardy fruits. To my mind, the benefits to be

derived in the line I mention would be practically nil outside a radius of say 20 miles from where the trial ground was situate. After some forty-five years' practical experience in different parts of the country, nothing is more clearly fixed on my mind than this, viz., hardy fruits that do well in one district do not necessarily do so in all. I expressed a somewhat similar opinion in your columns some years since. Further experience has confirmed it. For instance, what guide for us in Yorkshire would a trial of late dessert Pears be if conducted within 20 miles of London? The same argument would hold good for other counties much nearer thereto than we are. Very fortunately many owners of gardens read your pages nowadays. Nothing can be more misleading to them than to have the idea put into their minds that certain fruits which do well in one district are sure to do so in all. Many know this is not so, but others with less experience

do not. In my opinion, the more frequent expression by your numerous readers of their practical experience would be the best trial ground for hardy fruits at any rate. These notes need not be long ones, but should contain definite information as to the nature of the soil, altitude, position grown in, &c. My remarks do not apply generally to fruits grown under glass, though even in that case it does not follow that because a variety of fruit does well in one place, it will do the same in all. In the first garden I had sole charge of, we could never get a crop of Black Hamburgh Grapes without some shanked bunches. Here we seldom or ever have a shanked berry with the same variety. Cultural conditions were practically the same in both cases, though the soil is quite different. Further, for twenty-one years we have fruited Alwicks Seedling Grape very satisfactorily; with ordinary care at the setting period, it sets as freely as Black Hamburgh. Many of your readers have frequently seen them. Some years ago I gave a gardening friend a spare Vine, which he planted, and it grew well with him. He could never get a decent bunch to set, so cut it out. The place was

appear upon our tables with the same parts of the wild Parsnip, Carrot, Celery, &c., everyone will probably admit that the wild plants are not to their taste. Yet must our ancestors have eaten them in that same unpalatable condition before cultivation and selection had brought them to their present high state of perfection. If such changes can be wrought by cultivation in such unpromising plants as the wild Carrot and Parsnip, and others, why cannot some improvement be made in *Brachystelma*, where we already have a fleshy tuber to commence upon? Surely it is worth a trial, which could easily be made at one or more of the botanic stations in South or Tropical Africa, where high cultivation, with different kinds of treatment and manures, aided by selection, might possibly, with these plants, produce striking results in comparatively few years, and give to the world a new article of diet. *N. E. Brown.*

THE EXHIBITORS OF OTHER DAYS.—When reading the notes by Mr. Dean and Mr. Purley on the grand old plant-exhibitors, I was reminded by the mention of Mr. May's name of the wonderful *Ixoras* which he used to grow when gardener at Hawkesyard Park, Staffordshire, the equals of which I have never seen anywhere, either in Europe or America. Imagine hundreds of huge specimens, 5 to 8 feet high and nearly as much through them, growing like the common Laurel, and practically in flower the whole year. A remark which May made on one occasion in early spring, when some bystander expressed wonder at the amount of bloom on the plants, was to the effect that "It is not much. I decorated the church last week with them." On looking round the old Victoria regatta-house, where they grew, I was surprised at the absolute cleanliness of the plants—not a bug to be seen; and when I asked how he managed it, he said "Oh, I generally get up by daylight, and have an hour or two among them myself with clean water only before the men come to work." *Ixoras* were not the only hard-wooded plants this fine old gardener grew, for he was a master in cultivating *Ericas*, *Phenocomas*, *Primulas*, and *Dipladenias*. Much could be written of the wonders worked by him at that out-of-the-world old place, with its Ferneries, subterranean passages, and other structures, mostly made by him. It is now the home or retreat for Roman Catholic priests. *J. P., Kings Norton.*

THE BEST EARLY STRAWBERRY AS REGARDS FINE QUALITY.—During the past twenty years many new Strawberries have been raised, and received First-class Certificates from the Royal Horticultural Society for their supposed superior qualities over older varieties. Yet I venture to assert that no new Strawberry can excel *La Grosse Sucrée*, either as regards flavour or earliness. I remember this Strawberry being shown by Mr. Jones when he was gardener at Frogmore some twenty-six years ago, and the Fruit Committee of the Royal Horticultural Society thought it no improvement on existing varieties. However, it was retained at Frogmore, and the splendid crops grown there and in other gardening establishments testify to its sterling worth. When I had a Strawberry-house proper, I could make sure of nice, ripe fruit in January; and if brought on with Vines started at Christmas, ripe fruit can be gathered in February. My first batch of plants this season were put on to a shelf in a Muscat vinery, closed at Christmas, the fruits of which began to colour on February 11; while *Royal Sovereign* at this date were only just set, although taken into the vinery at the same date. Many gardeners whom I know have had other varieties sold to them as being the true *La Grosse Sucrée*, and have been disappointed, the same proving worthless. The true *La Grosse Sucrée* is a sure setter, and when in fruit it cannot be mistaken for any other variety, although it bears a resemblance to Keen's Seedling in the foliage, it is very distinct from that favourite Strawberry in flavour and size of berry. With me *La Grosse Sucrée* always sets freely and swells up quickly, finishing up large and glossy, and of a dark red colour, and flavour of the finest. Its thick, robust leaves never fall a prey to mildew, while its fine constitution, as grown in small pots, is a great gain where space is a desideratum. *W. C. Leach, Albury Park Gardens, Guildford.*

APPLE BARNACK BEAUTY.—I believe the origin described by your correspondent, "H. J. C.," p. 144, is correct, and that it was raised in the village of Barnack, not by a man of that name. Perhaps Mr. Metcalfe, the present head gardener

at Burghley House, Stamford, will give us his opinion of it, as he could enquire of some of his employes, who are natives of the village of Barnack. *B. G. S.*

—In reference to the remarks upon the origin of this excellent Apple by "J. R., North Wales" (*Gard. Chron.*, p. 159), I wish to say that it is named after the village it was raised in, viz., Barnack, in Northamptonshire, where the parent-tree, a seedling, is still in existence in a cottage garden. It was brought into commerce by Messrs. W. & J. Brown, Nurserymen, of Stamford and Peterborough, more than twenty years ago. *A. H.* [We must decline to print any more communications on this subject. *Ed.*]

"TAKE NOTICE."—The mention of the Duke of Bedford's forests in your extracts from Dr. Schlich's paper on "The Timber Supply and our Forests," reminds me of the following, which I copied some years ago from *Pinetum Woburnense*, a most valuable and interesting, but little known book: "Take Notice.—In 1743, John, Duke of Bedford, to commemorate the birth of his daughter Caroline, afterwards Duchess of Marlborough, planted a waste piece of ground, some 100 acres in extent, with Coniferous trees. In the course of a few years this plantation required thinning; the Duke sent for his gardener, and gave him minute instructions as to the manner and extent of thinning he required done. The gardener listened attentively, then replied, 'Your Grace must pardon me if I humbly remonstrate against your orders, as I cannot do as you desire. It would not only destroy the young plantation, but would be seriously injurious to my reputation as a planter.' 'Do as I desire you,' said the Duke, 'and I will take care of your reputation.' The plantation, which ran for nearly a mile along the road from the market town of Amptill to that of Woburn, was thinned according to instructions, and the Duke, who was impetuous, but, in his cooler moments, just, caused a board to be erected, bearing this inscription: 'Take Notice. This plantation has been thinned by me, John, Duke of Bedford, contrary to the advice and opinion of my gardener.' " *A. C. B.*

SAXIFRAGA RUDOLPHIANA.—This plant, so nicely shown recently at the Drill Hall, is a cross between *S. oppositifolia* var. and *S. retusa*. The chief value of the plant is in the early flowering, as it comes into flower with the very earliest Snowdrops and the Winter Aconite. Its earliness will be the better appreciated when in the end of the first week of March the flowering is well past. The habit of growth is that of *S. retusa* generally, which is more compact than in the *oppositifolia* varieties, the erect flowers partaking of the typical *oppositifolia* and somewhat of the colour. The freedom of flowering is very great, the little tufts of 4 inches across being simply one mass of the rosy-purple blossoms. Either for pots or the rockery, where early things are grown, this should be in request. *J.*

PRIMULA KEWENSIS ×.—It was generally admitted on Tuesday last, that this is one of the finest plants for some years past, and as a hybrid of great promise, it no doubt will be eagerly sought after. It is fortunate that it is the offspring of two free-flowering species, though it is curious that neither *P. verticillata* nor *P. floribunda* are usually seen well grown. Yet in the new comer we have a plant that for freedom or profuseness could hardly be excelled. The way the hybrid produces flowers right away from the base of the plant is a good feature in *P. floribunda*, while its greater profuseness of flowering, as well as the more extended whorled character of the inflorescence, is an undoubted character of *P. verticillata*. The crowded head of flower-buds seen at the apex of *P. kewensis*, as also the longer pedicels bearing the individual blossoms, is likewise a feature of the last-named species. The new-comer will assuredly prove a welcome plant. *E. H. Jenkins.*

THE WEATHER IN NORTH CORNWALL.—During February the rainfall was lower than the average, being only 2.24 inches, whilst last year it was 5.85 inches. Rain fell on fourteen days, and the most during twenty-four hours was 0.69 of an inch. On Wednesday, the 27th, st. rp frosts with easterly winds occurred; and the temperature of the air as registered by a thermometer facing due north, and fixed at 3 feet from the ground, has ranged from a minimum of 17° Fah. on the 15th, and again on the 16th, to maximum of 52° on Monday the 25th.

On ten mornings during the month there were registered more than 5° of frost. For the greater part of the month the barometric pressure has been remarkably even: for seventeen consecutive days the readings were well above 30 inches, the highest being 30.62 recorded at 8 P.M. on Friday the 15th, and the lowest 28.94 in. at 9 P.M. on Tuesday, 26th. The maximum was the highest record since Oct. 22 last. *A. C. Bartlett, Pencarrow Gardens.*

IRRITATING PROPERTIES OF PRIMULA OB-CONICA.—There is a note in *Knowledge* of Feb. 1, 1901, p. 32, regarding the irritation that *Primula obconica* sometimes produces. It runs thus:—"A piece from the base of the leaf-stalk applied to the wrist by an elastic band for two hours produced acute irritation, with blisters and swelling of the arm. Herr Nestler shows that it is the yellowish-green matter in the glandular hairs which possesses the poisonous properties. *E. Bonavia.*"

PEACHES FROM THE CAPE.—By chance I was present at the opening of a box of Peaches which had been sent from the Cape, by a man who is serving at the front, to his parents at Barnet. The fruits, to my astonishment, arrived without a bruise or spot upon any of them, and were of fair medium size, beautifully coloured, and perfectly ripe. No fruit was eaten at that time, but I was informed afterwards by one who had partaken of some that the flavour was exceptionally good. Undoubtedly these fruits were gathered and packed (not in the best and softest wood or cotton-wool) when much under-ripe, hence the perfect condition in which they arrived in this country. If our Cape friends can grow, pack, and forward Peaches a distance of several thousand miles, and they arrive in good condition on this side, surely our home growers ought to manage to send their fruits to market in a better state than is frequently the case. *H. M.*

IRELAND.

SEED TESTING STATION.

THE new Board of Agriculture is establishing a department for the testing of seeds, which will be some safeguard against the dumping of cheap foreign seeds on our shores. The points to be determined in the process are arranged under the following heads:—Purity, percentage of germination, true value, germinating energy (or capacity), and finally pedigree. The Board have just issued a leaflet embodying the above, and setting forth much collateral information to those interested. In sending samples for testing, the following simple rules should be borne in mind:—When taking a sample, select seeds from the top, middle, and bottom of the sack, then thoroughly mix them. It would be desirable, when selecting seeds and preparing the sample, to have a few witnesses present, in case a question may arise. The Department will require about three weeks to issue an exhaustive report, but after the lapse of a week they will issue an interim report. The charges will range from 6d. to 7s. 6d., the higher rates being limited to seedsmen. Enclosure of the fees with sample will be compulsory. To growers interested in the identification of grasses and weeds, the Department will send a brief report gratis, and diseases of plants will be named, and their nature, and remedies given. *A. O'Neill.*

ROBERT BROWN.

IN our issue for March 9 we alluded in the briefest terms (p. 157) to the unveiling by Dr. James W. H. Trail, Professor of Botany, Aberdeen University, of a bust of the renowned Dr. Robert Brown, a student of Marischal College, Aberdeen, a century ago. We now give the address of Dr. Trail on this occasion. He said:—

"It would scarcely have appeared probable that the comparatively bleak north-east of Scotland should have given birth to men that were renowned as botanists during a period when natural science found no esteem in the land, and no provision was made for the study of botany within its confines. Yet the University of Aberdeen may take pride in the recollection that among those who have studied within its walls have been pioneers of this science, who stand in the front rank of men of science, and are honoured civilised land.

OLD-TIME SCOTTISH BOTANISTS.

The first Scotchman who is known to have written on plants appears to have been a resident in Constantinople about 1740, and published a work, *De Virtutibus Herbarum*.

but dealt with their uses, real or supposed, and not with plants as subjects of study in themselves. Little is known of him beyond his nationality and name, ALAN OGILBY, but that suggests Forfarshire as his native county.

The next name to emerge as a Scottish botanist is one honourably known in the annals of Aberdeen—that of Dr. JAMES CARGILL, commemorated to this day by his bequest to Marischal College in 1614, which now yields eight bursaries, open to competition, of an aggregate annual value of £10. He was the son of an Aberdeen merchant. During the sixteenth century there had been a great outburst of intellectual progress on the continent of Europe in natural science, as in so many other studies. Recourse was once more made to Nature instead of to manuscripts, and plants were studied, compared, described, and figured—often, indeed, in very imperfect fashion, but with the desire to learn and to record faithfully what existed in fact, instead of what Dioscorides or other ancient writers had written of the plants of the East, wrongly identified with those of Middle Europe. Among the most illustrious of German botanists of this century was Kaspar Bauhin, who was the most scientific in aims and methods of descriptive botany until his death in 1624. He was for many years Professor of Botany in Basle. Dr. James Cargill studied botany under him before the year 1600. He is mentioned by Bauhin as having sent him seeds and plants from Scotland, and he is also mentioned as a valued corre-

spondent by two other well-known botanists—Conrad Gesner and Mathias de l'Obel. But we have no records from his own hand.

In 1620 was born a far more noted man, ROBERT MORISON, also the son of a merchant in Aberdeen. He became a student of the new Marischal College and University in 1625, and graduated in 1638. He was Liddell tutor in the University, having to teach 'the principalls of arithmetik' from 1641 to 1643, and under-master in the Grammar School in 1641. Designed by his parents for the Church, his own tastes led him to study medicine and botany. Joining the Royalist forces under the Marquis of Montrose, he was severely wounded in the head in the battle at the Bridge of Dee. Having to leave Scotland he went to Paris, where he obtained employment as a tutor, and continued to study medicine, botany, and zoology. He graduated M.D. at Angers in 1648. His reputation as a botanist led to his being entrusted with the charge of the gardens of the Duke of Orleans at Blois, then the finest in Europe. The Duke enabled him to travel through France in search of new plants, which enriched the gardens, and added to his own knowledge. He studied the affinities of plants, and devised a method of classification much in advance, in some respects, of those previously in use. In 1663 he went to London, where King Charles II. appointed him King's physician and Royal Professor of Botany in the University of Oxford, with the degree there of Doctor of Physic. He died in London in 1683, in consequence of injury received from the pole of a carriage while crossing

the street. His labours greatly advanced the study of botany. They are embodied in several works of much value, because of the careful descriptions and good figures of plants, and of the light cast in them on the natural affinities of numerous forms. His *Plantarum Umbelliferarum Distributis nova* is the first treatise devoted to the thorough treatment of a group of plants. The University of Aberdeen is fortunate in possessing a portrait of so distinguished a son.

Of another true naturalist, Dr. DAVID SKENE, I can now speak in only the briefest terms. Born at Aberdeen in 1735(?) he studied in Marischal College, and then went to Paris to add to his training as a physician. On his return to Aberdeen he soon took a foremost place in his profession, and sought earnestly to promote the equipment of the University as a centre of intellectual progress, especially in natural science and medicine. In the brief leisure of a busy life he was an ardent student of Nature, and made most careful and accurate descriptions of the animals, plants, and other products of Scotland. He was a valued correspondent of Linnaeus, Ellis, and other well-known naturalists of the eighteenth century, who acknowledge in their works their obligations for his aid, and express their high sense of his talents. His death before he had reached the age of forty precluded the publication by himself of any work from which the extent and value of his great ability and industry might have been understood. That he designed to produce one upon

period he habitually examined and carefully recorded the distinctive features of the new forms he met with, a method of great value to him in his later researches. In 1795 he entered the army, and accompanied the regiment of Fife Fencibles to Ireland with the rank of Ensign and Assistant-Surgeon. While in Ireland he continued his botanical studies, and occasional visits to London enabled him to make the personal acquaintance of others of similar tastes. Among these were Sir Joseph Banks, long President of the Royal Society, who formed a high opinion of his ability, and in 1801 recommended him for the position of naturalist on H.M.S. *Investigator*, commissioned to survey the coast of Australia, under Captain Flinders. He remained in Australia until 1805, when he returned to England, bringing with him examples of about 4,000 species of plants, by far the greater number of which had previously been unknown to botanists, and which represented a flora singularly unlike that of any other region that had as yet been carefully studied. On his return he was appointed Librarian to the Linnean Society, and in 1810 Sir Joseph Banks gave him the charge of his own fine library and scientific collections. From 1805 onwards he lived in London engaged in his official duties, and in the pursuit of botanical investigations upon his own enormous collections, and afterwards upon collections made in many parts of the world by others. In 1823 Sir Joseph Banks bequeathed to Dr. Brown his library and collections, along with the house in which they were kept, and an annuity, to enable him to continue his researches, subject to the condition that on his death the library and collections should pass to the British Museum. By Dr. Brown's wish they were soon transferred to the British Museum, and he was appointed first Keeper of the Botanical Department of that great institution. What honours could be accorded to him by the learned societies were freely bestowed. A Fellow of the Linnean Society in 1798, he was admitted to the Royal Society in 1811, and was welcomed as a member of many scientific societies at home and abroad, while marks of honour from various other sources flowed in upon him. He died full of years and honours in 1858. He published no large works; but many papers from his pen appeared in scientific journals, and as appendices to works of travel. Some of these were collected into two volumes published by the Royal Society in 1865 and 1867, but they gave only an imperfect idea of how much botany owes to him. His work was at first that of a descriptive botanist, but this very soon brought him face to face with problems that involved the most difficult questions in the science. In the endeavour to determine the relations of the little-known and very peculiar Australian flora, he found it necessary to choose whether to accept the convenient artificial system of classification devised by Linnaeus, and which held almost unquestioned sway in Britain, or to seek to discover the natural affinities of the plants, and to base the classification upon these. To those trained in methods and in the results of discoveries largely due to his genius it is scarcely possible to realise the difficulties that he had to overcome. He recognised that to ascertain relationships the structure and development of plants must be known to an extent very far beyond that yet reached. These researches demanded new methods, and the instruments alone available were very defective when compared with the necessities of every laboratory of the present day. But Brown overcame all difficulties, and, with instruments such that we can but marvel at the work done with them, he opened up new lines of research in structure, in development, and in functions of plants, and threw light on many points that had been darkness before he touched them, while he showed the way for others to advance, and may be said to have given form to many parts of the science. One record runs:—Those who knew him as a man will bear unanimous testimony to the unvarying simplicity, truthfulness and benevolence of his character. With an appearance of shyness and reserve in the presence of strangers, he combined an open-heartedness in relation to his familiar friends, and a fund of agreeable humour, never bitter or caustic, but always appropriate to the occasion, the outpourings of which it was delightful to witness. But what distinguished him above all other traits was the singular uprightness of his judgment, which rendered him on all difficult occasions an invaluable councillor to those who had the privilege of seeking his advice.



FIG. 69.—FLORAL ORNAMENT EMPLOYED AT THE FUNERAL OF HER LATE MAJESTY QUEEN VICTORIA. DESIGNED BY MESSRS. STANDISH AND CO.

the natural history of Scotland may be inferred from the manuscripts left by him. Fortunately, these fell into sympathetic keeping. The late Mr. Thomson, of Panchory, near Aberdeen, had them arranged and bound in a number of volumes, which now are preserved in the University Library. They show, in some measure, the width of interests and the genius of their writer; and one can but marvel that in so busy a life as his he could have done so much. They form a memorial of him, but not sufficient for his merits.

ROBERT BROWN.

I now pass to one whose fame as a botanist has for nearly a century been recognised wherever the science is studied, whose place was early recognised as in the foremost rank, and whose work will always be held in honour. ROBERT BROWN was born on December 1, 1773, the son of a Scottish Episcopalian minister in Montrose, at a time when legal restrictions pressed severely on the Episcopals in Scotland. He came to Marischal College in 1787, and his name appears in the register of students until 1790, in which year he went to Edinburgh to enter on the study of medicine. Our early records throw little light on the progress of students in their classes, so that we find no information in them as to his progress; but from other sources it is known that he early showed a marked love of science, and that while still engaged in his medical studies he made botanical excursions into the highlands of Aberdeenshire, Forfarshire, and Perthshire, which yielded plants not previously known as British. From an early

A university may well feel proud that such men have gone forth from it, and does right in taking occasion to honour their memory. To us this opportunity has been afforded by the generous gift of a bust of this true leader of men, one of whom it may be said with truth that he saw with clear vision in the plan of creation much that had been hidden until revealed by him. His cousin, Miss Hope Paton of Montrose, five years since gave to the town of Montrose a bronze bust of Dr. Brown, by Mr. D. W. Stevenson, R.S.A. I had the privilege of being present at the presentation, and can bear witness to the welcome the gift deservedly received. It has been Miss Paton's wish that our University should possess a replica of this bust, and she has asked Mr. Stevenson to execute this which you now see—a noble memorial of a great man. That it will be one of the most valued possessions of the University is beyond question. It is said that poets are born not made, and the same is surely true of such naturalists as Brown and the others named to-day. Yet even geniuses may remain short of fruition when all to which it can direct its efforts is wanting. They had to go elsewhere to study science. But largely to them and such as these we owe the true estimate of the worth of natural science and the facilities for its study that we now enjoy.

Aberdeen has sent out a succession of students of botany in whom the University may feel pride, of whom may well

spondent by two other well-known botanists—Conrad Gesner and Mathias de l'Obel. But we have no records from his own hand.

In 1620 was born a far more noted man, ROBERT MORISON, also the son of a merchant in Aberdeen. He became a student of the new Marischal College and University in 1625, and graduated in 1638. He was Liddell tutor in the University, having to teach 'the principalls of arithmetik' from 1641 to 1643, and under-master in the Grammar School in 1641. Designed by his parents for the Church, his own tastes led him to study medicine and botany. Joining the Royalist forces under the Marquis of Montrose, he was severely wounded in the head in the battle at the Bridge of Dee. Having to leave Scotland he went to Paris, where he obtained employment as a tutor, and continued to study medicine, botany, and zoology. He graduated M.D. at Angers in 1648. His reputation as a botanist led to his being entrusted with the charge of the gardens of the Duke of Orleans at Blois, then the finest in Europe. The Duke enabled him to travel through France in search of new plants, which enriched the gardens, and added to his own knowledge. He studied the affinities of plants, and devised a method of classification much in advance, in some respects, of those previously in use. In 1663 he went to London, where King Charles II. appointed him King's physician and Royal Professor of Botany in the University of Oxford, with the degree there of Doctor of Physic. He died in London in 1683, in consequence of injury received from the pole of a carriage while crossing

be named Dr. MACGILLIVRAY, to whom at last a memorial has been raised in the University he adorned; Dr. DICKIE, the first Professor of Botany in Aberdeen; Sir GEORGE KING, who has done such noble work for botany in India; his successor in Calcutta, Dr. DAVID PRIN; and Dr. GEORGE WATT, who has formed the Museum of Economic Botany of India in Calcutta.

The provision for teaching botany within Aberdeen University has been revolutionised within the past few years, and the munificent gift of a botanical garden by Miss Cruickshank to advance the study of botany in Aberdeen will soon begin to bear fruit. We cannot hope that others will arise to surpass in eminence those of whom I have spoken; but they beckon us onward, and we shall strive to be not unworthy of our efforts to follow such leaders.

I have now, in Miss Paton's name, to ask you to accept on behalf of the University of Aberdeen of this admirable bust which will continue to reproduce to our successors the features of one of the most famous sons of Alma Mater.

PRINCIPAL MARSHALL LANG received the gift on behalf of the University in a most eloquent speech, at the close of which he moved a vote of thanks to the sculptor, Mr. STEVENSON, who, in reply, said, 'It did not often fall to the lot of an artist to have to work upon such a head, and never in his life had he had more pleasure in working at anything than on the bust of Robert Brown.'

SOCIETIES.

ROYAL HORTICULTURAL.

MARCH 12.—The fortnightly meeting of the Committees of the Royal Horticultural Society was held on Tuesday last in the Drill Hall, Buckingham Gate, Westminster. A most brilliant display was made by the various flowering plants exhibited, and the Hall was conveniently filled with exhibits of a miscellaneous description.

Orchids were shown numerous, and the ORCHID COMMITTEE recommended awards to novelties, including two First-class Certificates, four Awards of Merit, and one Botanical Certificate.

The FLORAL COMMITTEE made no awards to new plants or flowers. Among the subjects presented before this Committee were two groups of Cyclamen, both of them good, one of which from Mr. MAY, whose address is given below, displaying unusually fine colours, in addition to the other good qualities possessed by the plants; forced plants, such as hardy Azaleas, Lilacs, Prunus, Cerasus, Persica, Tulips, Narcissus, and hardy alpine plants, many of which had been encouraged to bloom in pots in frames; Cinerarias were present in two groups, and a small group of plants of *Primula kewensis* was much admired.

The FRUIT AND VEGETABLE COMMITTEE recommended an Award of Merit to the well known and excellent late dessert Apple Lamb Abbey Pearmain, shown by Messrs. JAS. VEITCH & SONS, and a Gold Medal to the same firm for an exhibit of 100 dishes of Apples. A Silver Knightian Medal was awarded to Mr. A. J. THOMAS, of Rodmersham, Kent, also for Apples.

Owing to the unavoidable absence of Mr. G. DAVISON, who should have delivered a lecture on "Climbers for Pergolas, Verandahs, &c.," the Rev. GEO. HENSLOW gave a lecture in which he described some interesting circumstances in connection with several of the plants exhibited in the Hall.

Floral Committee.

Present: W. Marshall, Esq., in the Chair; and Messrs. Chas. E. Shea, H. B. May, R. Dean, W. P. Thomson, R. Wilson Ker, C. J. Salter, Chas. Jeffries, R. C. Notcutt, J. W. Barr, J. D. Pawle, H. J. Cutbush, E. H. Jenkins, Chas. Blick, Geo. Paul, Geo. Nicholson, E. T. Cook, and John Jennings.

FORCED PLANTS.

Messrs. W. PAUL & SON, Waltham Cross Nurseries, Herts, displayed a very large group of forced flowering shrubs in pots. The beautiful *Prunus triloba*, wreathed with double pink flowers, was finely shown, and many varieties of the double-flowered Peach, including the richest-coloured and best of all, known as Carnation-flowered. There were also Camellia-flowered and Double White, &c.; *Prunus myrobala* rose-plena, *Prunus floribunda* Scheideckeri, *Persica sanguinea* fl.-pl., rich rose coloured, almost red; *Pyrus Malus floribunda*, *Cerasus Fortunei*, *Staphylea colchica*, *Kerria japonica*, *Deutzia gracilis*, *Forsythia suspensa* (a fine plant of this lovely species), *Xanthoceras sorbifolia*, *Clematis indivisa lobata*, Lilacs, *Magnolia conspicua* and *M. stellata*, and varieties of *Clematis* were some of the good things in this group (Silver Gilt Flora Medal).

Prunus (Amygdalus) Davidiana alba was well shown by Messrs. JAS. VEITCH & SONS, who had seven plants, some 6 or 7 feet high, full of flower, cut off at the ground-level and inserted in pots. *P. Davidiana rubra*, also shown, with pink-coloured, rather than red flowers.

Messrs. R. & G. CUTHBERT, Southgate Nurseries, Middlesex, again made a magnificent show of hardy Azaleas. Some of the prettiest varieties were Peter Koster, M. Koster, Jeanne

A. Koster, the well-known Anthony Koster, W. E. Gladstone, Dr. Reichenbach, &c., all of them bearing abundant large flowers in various shades of yellow, bronze, and red colour. There were also some standards of varieties of Lilac, *Azalea mollis*, *Laburnum vulgare*, *Viburnum Opulus*, *Prunus sinensis* fl.-pl., *Cytisus purpureus*, &c. (Silver Banksian Medal).

Messrs. CUTBUSH & SON, nurserymen, Highgate and Barnet, showed an immense number of Tulips in pots (8 inch), most of these were the best varieties for blooming in pots and for bedding out. Striking in colour and dwarf of stature were Ophir d'Or, soft yellow; Leonardo da Vinci, scarlet and yellow; Rosamund Hinkman, Rembrandt, Epaminond or Crimson Flame, Keizerkroon, M. Tresor, a nice yellow flower, dwarf; Queen of the Netherlands, pale flesh, large flower, good for growing in pots. There were forty-five varieties (Silver-gilt Banksian Medal).

Messrs. J. PEED & SONS, Roupell Park Nurseries, South Norwood, exhibited a group of forced plants, including *Azalea mollis*, *Narcissus*, *Lilies of the Valley*, Lilacs, &c.

Messrs. PAUL & SON, The Old Nurseries, Cheshunt, showed a group of *Lachenalias* of the varieties luteola and Nelsoni, both of which are pretty, but the latter, with its larger flowers of rich yellow colour and red, is the most effective. Messrs. Paul also showed a variety of the old *Begonia fuchsoides*, with exceedingly bright scarlet flowers; *Prunus Mume* (from the open border), and *Cerasus J. H. Veitch*.

INDOOR PLANTS.

Messrs. CANNELL & SONS, Swanley, had a group of what they call New Century Cinerarias, of tall habit, but very suitable to be grown for affording cut flowers, the ramifying branches being of considerable length, making the flower excellent for filling large vases. The colours are various, but chiefly light tints.

Messrs. JAS. VEITCH & SONS exhibited a group of Cinerarias under the name of C. polyantha "Kew Blues." They were dwarf, well-flowered plants, with heads of somewhat small flowers in shades of blue and purple. A similar strain may be seen in bloom at the present time in the greenhouse (No. 4), Royal Gardens, Kew. They are said to come true from seeds, that is all of the seedlings produce flowers of shades of blue and purple.

Mr. JOHN MAY, Gerdon Nursery, St. Margarets, Twickenham, showed about twelve dozen plants of a very superior strain of Cyclamen, dwarf, very floriferous, and with the colours pure and distinct. There were pure white, white with rosy-purple eye, and in regard to size of bloom these were the premier varieties. Crimson selfs of various shades, rose, mauve, and magenta tints, were very pure and distinct. A rich crimson variety was uncommonly good (Silver Flora Medal).

The CHURCH ROAD NURSERY COMPANY, Hanwell, W., also exhibited Cyclamen floriferum very extensively, and the plants were of the fine stamp that we usually look for from this nursery—short stalked foliage, large blooms in dense masses, and the colours clear and decided. The majority of the flowers consisted of light tints (Silver Banksian Medal).

Mr. GEO. MOUNT, The Rose Nurseries, Canterbury, showed excellently well as cut blooms Rose Mrs. J. Laing, pink; Captain Hayward, deep crimson; and La France. All were furnished with more or less long stems (Silver Banksian Medal).

Messrs. JOHN LAING & SONS, Forest Hill Nurseries, London, S.E., exhibited a group of miscellaneous stove and greenhouse plants.

Messrs. F. SANDER & CO., St. Albans, showed a bloom of a new white double-flowered Azalea indica, named Souvenir de la Reine Victoria. The flower was unusually large, and pure white.

Some new varieties of *Hippeastrum* were shown by Captain HOLFORD, C.I.E., Westonbirt, Tetbury (gr., A. Chapman). Captain HOLFORD, we understand, will exhibit an imposing collection of these plants at the next meeting of the Society.

Mr. A. CHANDLER, Bunch Lane, Haslemere, showed several varieties of *Lachenalias*.

C. E. SHEA, Esq., The Elms, Foot's Cray, Kent, showed some very robust plants of *Primula obconica*, the flowers of which showed a tendency to doubling.

Messrs. W. PAUL & SON showed some new single-flowered Camellias, Apollo, Mars, and Jupiter, all of them shades of red.

Primula kewensis, a hybrid from *P. verticillata* ♂, × *floribunda* ♀, was exhibited grandly by the Director of the Royal Gardens, Kew. A group of plants showed what an excellent garden plant this hybrid has made. The plants were in 6-in. pots, the flower spikes more than a foot high, twenty or more on a plant, the flowers themselves being rich yellow colour. The habit of the plants is very much stronger and superior to that of either parent. We gave an illustration of flowers of this plant in the *Gardeners' Chronicle*, March 31, 1900.

HARDY FLOWERING PLANTS.

Messrs. WALLACE & CO., Kilnfield Nurseries, Colchester, had a very choice collection of hardy plants in flower; these

included *Iris Tauri*, a new species with pretty purple flowers about 3 inches high; *I. Heldreichii*, *I. reticulata*, *I. persica* var. *magna*, *I. Tubergeniana*, *I. stylosa*, *I. s. alba*, and *I. s. speciosa*, *Fritillaria pluriflora*, *F. aurea*, *Chionodoxas*, *Scilla sibirica* var. *alba*, *Anemones*, *Hepaticas*, *Narcissus Barri* conspicuus, &c. We shall allude at greater length to the *Iris* on a future occasion (Silver Banksian Medal).

Mr. THOS. S. WARE, Hale Farm Nurseries, Feltham, exhibited an extensive group of hardy flowering plants in pots; these included *Iris sindjarensis*, *I. Heldreichii*, *I. ambriata*, *Primula floribunda*, *Narcissus*, hardy *Cyclamens*, *Saxifragas*, *Saxifraga ciliata*, blue *Primroses*, *Hepaticas*, *Lachenalia luteola maculata*, *L. Nelsoni*, *Muscari* (Silver Banksian Medal).

Messrs. GEO. JACKMAN & SON, Woking, Surrey, showed a group of plants including some forced *Narcissus*; also *Ramondia pyrenaica*, *Incarvillea Delavayi*, *Cyclamen repandum*, double yellow *Wallflower*, *Adonis amurensis* (see fig. 68), and other species of early-flowering hardy plants.

Messrs. BARR & SONS, King Street, Covent Garden, London, W.C., had a group of forced *Narcissus*, in which some very fine varieties were represented, as Golden Spur, a large, self-coloured trumpet *Daffodil*, *Barri* conspicuus, *Horsfieldi*, *Sir Watkin*, &c. Some of the early *Crocuses*, *Chionodoxa sardensis*, *C. Lucilia*, the giant *Snowdrop Galanthus Ikarie*, *Fritillaria pluriflora*, *F. aurea*, *Iris orchnioides*, a yellow-flowered species; *I. reticulata*, *I. persica Heldreichii*, &c.

A hybrid between *Scilla bifolia* and *Chionodoxa Lucilia* was shown by E. AUGUSTUS BOWLES, Esq., Myddleton House, Waltham Cross.

Narcissus Committee.

The following members of the *Narcissus* Committee met in the Drill Hall on Tuesday, March 12:—

Present: J. T. Bennett-Poe, Esq., in the Chair; and Messrs. G. Reuthe, W. T. Ware, S. A. de Graaf, P. R. Barr, G. T. Titheradge, J. D. Pearson, W. F. M. Copeland, R. Sydenham, W. Poupart, and Rev. G. Engleheart.

The only award made, that of a Silver Flora Medal, went to Messrs. BARR & SONS, Covent Garden, for a group of *Narcissi*.

Orchid Committee.

Present: H. J. Veitch, Esq., in the chair; and Messrs. J. G. Fowler, De B. Crawshaw, H. M. Pollett, H. Ballantine, H. White, F. Sander, W. H. Young, J. Wilson Potter, T. W. Bond, E. Hill, H. S. Pitt, N. Bilney, F. A. Rehder, J. Douglas, Jeremiah Colman, and H. J. Chapman.

Messrs. J. VEITCH & SONS were awarded a Silver-gilt Flora Medal for a large group consisting wholly of hybrid Orchids. The *Dendrobiums* were extensively represented, the most prominent of these being a finely-flowered plant of *D. eusomum leucopteron* (nobile × *endocharis*), *D. Wiganiae* (signatum × nobile), with its yellow flowers are most attractive when arranged with the lighter sections; *D. Euryalus* (nobile × *Ainsworthii*) has the dark flattened lip of *D. Ainsworthii*; *D. splendissimum* in numerous varieties. The following were shown: the free-flowering *D. Wardiano-japonicum*, derived from the parentage indicated in the name, and *D. Wiganianum* (*Hildebrandtii* × nobile Cooksoni), which differs from the variety shown recently by Sir F. Wigan in having a maroon-coloured disc. Among the *Lælio-Cattleya* hybrids were included some fine varieties of *L.-C. callistoglossa ignescens* (Warszewiczii × *purpurata*), *L.-C. Myra* (flava × *Trianae*), illustrating the variable characteristics derived from the same seed-vessel; *L.-C. Automachus* (*Dominiana* × *Warszewiczii*), *L.-C. Clonia* (elegans *Turneri* × *Warszewiczii*) was most attractive in its deeply coloured sepals and petals, the lip being reddish-purple, with yellow squaring through the throat; *Phalenopsis* Mrs. J. H. Veitch (*Luddemanniana* × *Mawii*), with a six-flowered raceme of its yellow and purple-spotted flowers, improves as the plant gains strength; and a fine plant of *Cymbidium eburneo-Lowianum*, with four racemes of its delicate creamy-white flowers, differing from the general type by the more rosy-coloured markings on the front lobe.

Messrs. HUGH LOW & CO., Bush Hill, Enfield, were awarded a Silver Flora Medal for a large group of Orchids, consisting principally of finely flowered species and hybrids of *Dendrobium*. Some very remarkable varieties of *Cattleyas* were also included, the finest among them being *C. Trianae formosa* with finely balanced sepals and petals; the petals have a rich purple blotch from the apex down the centre, the lip being particularly bright in colour and of good shape. Some good varieties of *C. Schroderae* were also included; plants of *Lælia Jongheana* were still prominent in unusually fine varieties; and some of *Cypripedium*, *Angraecum*, and other species, were observed.

Mr. J. CYPHER, Cheltenham, sent a remarkably varied group of hybrid *Dendrobiums*, those of the *D. Ainsworthii* section being the better varieties. *D. rubens grandiflora*, *D. melanodiscus*, and distinct varieties of *D. Cybele*, were remarked, as well as some finely flowered plants of *D. atro-vioaceum*, *D. nobile nobiliss*, and *D. Findlayanum*. A Silver Flora Medal was awarded.

Mr. H. L. PITT, Rosslyn, Stamford Hill (gr., Mr. W.

Thurgood), was awarded a Silver Flora Medal for a large group, consisting principally of finely-grown and well-flowered *Dendrobiums*, a specimen *D. aggregatum* in the centre, a plant that was covered with flowers, being most attractive. Some good varieties of *Phaius*, *Norman*, *Lycaste*, *Odontoglossum*, *Sophranitis grandiflora*, and other species were included. A fine variety of *Miltonia Bleuana* (*vexillarium* \times *Roezlii*), with two racemes of flowers, was a very prominent object.

W. THOMPSON, Esq., Stone, Staffordshire (gr., Mr. W. Stevens), was awarded a Silver Flora Medal for a group of *Odontoglossums*, grown in his usual fine style, most of which have been previously certificated, and described in the *Gardeners' Chronicle*. There were included *Odontoglossum excelens McBeaniana*, *O. e. nobilior*, *O. Andersonianum delicatum*, and *O. Adriane Lord Roberts*. The collection included likewise some good varieties of *O. Rossii majus*, and cut racemes of *O. Humeanum* with as many as seven flowers, and of *Cochlidia Noecliana*.

J. COLEMAN, Esq., Gatton Park, Reigate (gr., Mr. W. P. Bound), was awarded a Silver Banksian Medal for a neatly-arranged group consisting of finely-flowered plants of *Laelia anceps Stella*, several good *Dendrobiums*, *Cologyne cristata* in variety, finely-flowered *Laelia Jongheana*, *Laelio-Cattleya* Captain Percy Scott (*elegans grandiflora* \times *labiata flammea*), a most desirable hybrid, possessing bright rose-tinted sepals and petals, a crimson-purple lip, the throat suffused with a yellow tint; a good variety of *Cymbidium Lowie-eburneum* was noted.

Mrs. HAYWOOD, Woodhatch Lodge, Reigate (gr., Mr. C. J. Salter), sent some finely-grown plants of hybrid *Dendrobiums*, one of the finest of which was *Dendrobium splendidissimum purpurascens*, a flower with richly-coloured sepals and petals, the lip crimson-purple on the front lobe, and white around the unusually large disc; *D. s. pallens*, with delicately-tinted flowers; *D. s. rubens*, having very deep sepals and petals, and a finely-shaped lip. Cut blooms were also shown.

Mr. R. G. THWAITES, Streatham (gr., Mr. Black), sent a nice group, in the back row of which figured a large plant covered with flowers of the variety *Dendrobium nobile Cooksoni*; several fine varieties of *D. Ainsworthi*, *D. Wiganie*, with a peculiar yellow tint; *D. Kenneth*, *D. Owenianum*, and other interesting hybrids were noted. A pretty *Odontoglossum Pescatorei* with finely-spotted flowers, and other interesting Orchids were also shown by this exhibitor. A Silver Banksian Medal was awarded.

Mr. FLORENT CLAES, Brussels, sent a fine collection of hybrid *Odontoglossums*.

Sir T. LAWRENCE, Bart., M.P., Burford Lodge, Dorking (gr., Mr. W. H. White), exhibited *Odontoglossum* \times *Andersonianum* Dorman's variety, which is a beautifully spotted flower, having a yellow ground colour; a plant of *O. Ruckerianum*, possessing a large branched flower-spike; and *O. coronarium miniatum*, whose flowers appear as if polished.

Captain HOLFORD, Westonbirt, Gloucestershire (gr., Mr. A. Chapman), showed a well grown plant of *Cymbidium eburneum-Lowianum* in great beauty.

Mr. F. A. REHDER, Gipsy Hill, sent a large-flowered variety of *Dendrobium Sybil*.

Awards.

FIRST-CLASS CERTIFICATES.

Odontoglossum crispum Queen Empress.—This is a lovely variety of the roseum section. The flowers are about 4 inches in diameter, the sepals of a deep rose tint, the petals of a lighter tint; the lip almost white, and furnished with a yellow disc. The plant shown bore a raceme of nine blossoms. From Mr. W. Thompson, Stone, Staffordshire.

Cypripedium Lord Derby, Sander's variety (*Rothschildianum* \times *superbiens*).—The fine dorsal sepal is of a green tint, and covered with bands and spots of a rich purple tint; the long petals are green, heavily spotted with dark brown; the lip of a chocolate-brown. The plant bore a three-flowered raceme. From Messrs. F. SANDER & Co., St. Albans.

AWARDS OF MERIT.

Laelio-Cattleya Vacuna (*C. guttata* \times *L. cinnabarina*).—A most desirable hybrid, with pale yellow flowers, except the front lobe of the lip, which is intense crimson-purple. From Messrs. J. VEITCH & SONS.

Cypripedium Ernesto (parentage unrecorded).—Very distinct; the lip, petals, and dorsal sepal, suffused with highly polished brown tint; the outer margin of the dorsal is white. A most desirable addition, from Mr. F. A. REHDER, Gipsy Hill.

Dendrobium Ainsworthi Editha.—A very desirable addition, midway between *D. aureum* and *D. nobile nobiliss.* The flowers are larger and more deeply coloured than in the typical *D. Ainsworthi* section. From Mrs. HAYWOOD, Woodhatch, Reigate.

Dendrobium Roeblingianum (*Ruckeri* \times *nobile*).—A most distinct hybrid raised in America. The sepals white, the petals white tipped with rose; the lip white, and the yellow-

coloured disc covered with downy hairs and rosy-purple lines. From Mr. R. G. THWAITES, Chessington, Christchurch Road, Streatham.

BOTANICAL CERTIFICATE.

Lupinus tricallosus.—A singular-looking species, with an erect spike of brown and creamy-white flowers. From Sir T. LAWRENCE, Bart., Burford Lodge, Dorking.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq., Chairman; and Messrs. H. Esling, Geo. Kelf, J. Cheal, J. Willard, W. Bates, S. Mortimer, A. Dean, C. Herrin, E. Beckett, J. Wright, H. Markham, W. Poupert, Jas. Veitch, W. Iggulden, A. Ward, G. Norman, J. Smith, F. Q. Lane, A. H. Pearson, H. Somers Rivers, W. Wicks, and J. Jaques.

Mr. ROBERT MAHER, The Gardens, Yattendon Court, near Newbury, had fruits of the following varieties of Apples:—King of Tomkins County, Annie Elizabeth, and Wormesley Pippin, showing good fruits of each.

A rather soft fleshed, red-coloured Apple, named Caradoc Scarlet, was shown by Mr. E. W. CADDICK, Caradoc, Ross (gr., Mr. Roe), and Apple Chambers' Seedling, not unlike small fruits of Blenheim Orange, was shown by Mrs. E. B. CHAMBERS, 32, Broad Street, Abingdon.

Several varieties of Apples were shown by Mrs. ERNEST HILLS, Redleaf, Penshurst, Kent (gr., G. Ringham). These were Gooseberry Pippin, Winter Queening, Golden Knob, a small firm Apple covered with russet; Redleaf Russet, and Redleaf Seedling, obtained from American specimens of Newtown Pippin, sown in 1885. The fruits of the last-named variety are medium size, very smooth skinned, and yellow coloured; French Crab and Sheep's Nose were also shown by this exhibitor (Vote of Thanks).

A collection of Apples from Mr. A. J. THOMAS, Rodmersham, Sittingbourne, included about sixty dishes, and there were some capital fruits among them. Some of the best were Gloria Mundi, Chelmsford Wonder, Blue Pearmain, Lord Derby, Newton Wonder, Striped Beeding Mère de Ménéage, Lane's Prince Albert, Wiltshire Defiance, Annie Elizabeth, Belle de Pontoise, Lady Henniker, and Allington Pippin. There were several dishes of Pears also (Silver Knightian Medal).

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea, made an exhibit of about 100 dishes of excellent Apples, and the following Pears, Catillac, Bellissime D'Hiver, Verulam, and Mariette de Millepieds. It is difficult to make a selection of the best fruits when all were so fine, but the following varieties may be mentioned, Lane's Prince Albert, King of Pippins, Blenheim Orange, Schoolmaster, Ribston Pippin, Tyler's Kernel, Bramley's Seedling, Sturmer Pippin, Beauty of Stoke, Bismarck, Margil, Sandringham, Melon, Withington Fillbasket, Norfolk Beaufin, Fearn's Pippin, Baxter's Pearmain, King of Tomkins County, Beauty of Kent, Lord Derby, Flower of Kent, Scarlet Nonpareil, American Mother, Castle Major, &c. (Gold Medal).

Awards.

Apple Lamb Abbey Pearmain.—This is a very old and excellent late dessert Apple, of moderate or small size. It was shown in excellent condition by Messrs. JAS. VEITCH & SONS, LTD., Chelsea. It is said, by HOGG, to have been raised at Lamb Abbey, near Dartford, Kent, in 1804, from a pip of an imported fruit of Newtown Pippin. The fruits shown by Messrs. VEITCH were still exceedingly firm, too hard in fact to be eaten with pleasure (Award of Merit).

READING & DISTRICT GARDENERS'.

A PRACTICAL paper on "Begonia Culture" was read by Mr. F. LEVER, The Gardens, Hillside, Reading, at a recent meeting. The President, Mr. Leonard G. Sutton, occupied the chair, and there was a large attendance. Mr. Lever dealt with his subject under the following headings:—seed, soil, preparing for sowing, sowing, treatment, shading, air, pricking off the seedlings, potting, planting out, labelling, lifting, seedlings for pot-culture, starting old tubers, tubers for planting out in beds, fibrous-rooting Begonias for bedding, division of roots, preparing the beds, propagating double tuberous varieties from cuttings, seed-sowing and fertilisation, storing tubers, winter-flowering Begonias, varieties of *B. Rex*, insects, and leaf-rust. A very interesting discussion followed, in which Messrs. L. G. Sutton, Hinton, Bright, Wilson, Fry, Wicks, Neve, Townsend, Harris, Macdonald, Cretchley, Pigg, G. Smith, Alexander, and Barnes, took part.

A feature of the meeting was the numerous exhibits staged by the following members:—Mr. F. Lever, Mr. A. F. Bailey, gr., Leopold Lodge; Mr. H. House, gr., Oakfield; Mr. E. S. Pigg, gr., Samoa; Mr. F. Fry, gr., Greenlands; Mr. H. Wilson, gr., Lower Redlands; Mr. W. Townsend, gr., Sandhurst Lodge; and Mr. F. Bright, gr., Whiteknights.

The Society's Certificates of Cultural Merit were awarded to Mr. F. Lever for his *Odontoglossum*, and to Mr. F. Bailey for a batch of *Star Primulas*.

A warm discussion took place with regard to the election of a lady-gardener as an "ordinary" member of the Association. On being put to the vote 90 per cent. voted in favour of the lady being elected as an "ordinary" member.

DEVON AND EXETER GARDENERS'.

At the last meeting of the Association an excellent paper on the subject of hardy fruit-growing for Devonshire was read by the Hon. Secretary, Mr. Andrew Hope, on behalf of Mr. F. J. Fletcher, who had been called away to the Channel Islands on business.

Mr. Fletcher said that those who advocated the planting of fruit-trees on farm land without arranging for skilled and experienced cultivation afterwards, were as far wrong in their counsel as those who maintained that hardy garden fruit was a drug in the English markets. In cases where the experiments of fruit-growing on a large scale, as the outcome of the agitation of twelve to fifteen years ago, had failed, the matter had been taken in hand without proper discrimination and foresight. The land had not been properly prepared, the varieties planted were not well chosen for the purpose, and provision had not been made for the proper cultivation and care of the trees after planting. The results of mismanagement are visible in many modern orchards. The trees are stunted, enkered, and badly pruned. Speaking of Devon as pre-eminently a fruit county, Mr. Fletcher deplored the fact that there are few such up-to-date orchards in the county as were to be seen in Kent. At the same time, soil and climate were in favour of Devonshire. Fruit-growing, said the writer, was, after all, more of a horticultural than an agricultural question, and those orchards would do best which had the advantage of being superintended by one trained horticulturally, either in a private garden or in a commercial nursery. The only good orchards Mr. Fletcher had seen in the county were those tenanted by up-to-date market-gardeners. Mr. Fletcher spoke of the deep rich soils and the sunny southern slopes in the county which were peculiarly adapted by Nature for successful fruit-forming. Not only could the larger and harder fruits be grown successfully, but he saw no reason why Devonshire should not be a formidable competitor in the matter of the smaller and softer fruits as well, such as Strawberries, Gooseberries, Raspberries, and Black Currants, and relieving at least some of the agricultural distress.

A friendly competition among the members for the best dish of dessert Apples resulted in the 1st prize being awarded to a dish of fine fruits of King of Tomkins County.

MANCHESTER HORTICULTURAL IMPROVEMENT.

Gardeners and Gardening.—The winter session was brought to a close on the 21st ult., when an address was given by Mr. ABRAHAM STANSFIELD, the senior vice-president, who sketched the progress of horticulture during the nineteenth century.

Mr. Stansfield remarked that in the grand and rapid march forward of the physical sciences during the century just ended, the science of horticulture had not been laggard. He said advisedly the science of gardening, which was greater than the art of gardening, as it taught the gardener why he did a thing. But first he wished to say a word as to the social status of the gardener in this country, as compared with that accorded him in most other countries. Even in remote Russia, the brother of a German friend of his, who was head gardener to one of the Russian grand dukes, had the daily honour of dining with his Imperial master. This was as it should be, for a fully-equipped head gardener, in these days, required not only to be well-educated, but to be a veritable Admirable Crichton in his way, as, besides knowing the art of gardening, he must have some knowledge of botany, some acquaintance with geology, with chemistry, with meteorology, with entomology, and ornithology, not to name geography and the languages. It was high time that one so accomplished obtained that social consideration which was his due. To that end Mr. Stansfield said he would, in the future, use both his tongue and his pen. He desired to emphasise the close connection between botany and gardening. Botany was, in fact, the father of horticulture, and to our deeper and more exact knowledge of the structure and functions of plants was to be ascribed the immense stride forward in gardening; just as, in natural philosophy, our ideas had been corrected through the patient investigations of our Lancashire Joule, in conjunction with Meyer and Herne, who for the first time had fixed the mechanical equivalent of heat, and shown the correlation of the physical forces. Indeed, our more exact acquaintance with vegetable physiology had had most wonderful results. It had enabled us, by artificial fertilisation, to increase the world's flora perhaps a hundredfold, quite apart from the newly discovered species which were annually poured into Europe from other regions of the earth. And at what rate the latter proceeded they might judge when, in Orchids alone, it was estimated that whilst at the beginning of the nineteenth century the total number of known species, including European, was less than 400, it had grown in 1845 to 3000, and thirty years later to 6000, not including those varieties which illustrated the immense and all but inexhaustible capacity of Nature for improvement and development. Let them take the wild Cabbage of the sea-cliffs of Britain, *Brassica oleracea*, and see what botany, by hybridising and selecting, had done for gardening. From this humble wilding, as many of them would be aware, they had been able to obtain, in addition to the numerous varieties of Cabbages proper, such delicious esculents as the Cauliflower, the Brussels Sprouts, the Broccolis, Kales, and other vegetables of that class. Compare, again, the wild Carrot, Celery, Turnip, and Asparagus with the improved varieties of the same, in number beyond all counting, and one was really astonished. Mr. Stansfield referred at still greater length to the improvements hybridising had effected in florists' flowers, commencing those who had, in this country and elsewhere, devoted themselves to special cultures; and to the great pioneers in fruit-culture.

BRADFORD AND DISTRICT CHRYS- ANTHEMUM.

MARCH 4.—The annual meeting of this Society was held on this date, Mr. W. HORSMAN presiding over a well-attended meeting.

The Hon. Secretary Mr. R. Eichel, read the report and balance sheet, which afforded satisfactory evidence of the monetary condition of the Society, there being a balance of £80 at the bank. Referring to the late show, the committee have been complimented upon the excellent display of meritorious exhibits. The Society's 10 guinea Silver Challenge Cup has been won three times by Mr. Midgley, gr. to Mrs. Mason, and becomes now his property. Mr. W. Horsman was re-elected as chairman of the Committee of Management. Addressing the meeting, he thanked his fellow-committeemen for the honour they had done him in re-electing him for the seventh time as their chairman. Referring to the balance-sheet, he said it was most gratifying to be enabled to assure them that the Society, in spite of the adverse balances of neighbouring societies, had borne the brunt of troubled times successfully, and he trusted that every member of the Society would do his best to make the annual show a success.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

MARCH 11.—There was a moderate attendance of members of this institution at the annual general meeting, held on Monday evening last at the Caledonian Hotel, Adelphi, Strand. Mr. W. ROUNDELL presided. We extract the following from—

THE REPORT OF THE COMMITTEE FOR 1900.

"Eighty-three members joined during the year, nineteen lapsed, and four died. The membership now stands at 851. The amount of subscriptions paid by members to the Benefit Fund, including arrears, was £1346 14s. 8d. The sick pay account was £301 3s., there having been a great amount of sickness during the early part of the year. This is covered by deductions of 8s. 10d. and 5s. 10d. respectively in the two scales. The balance in this fund (including £1203 0s. 10d. in lapsed members' account) is now £13,371 0s. 3d."

"The Benevolent Fund has assisted several members during the year, the amount paid out being £82, leaving a balance of £3403 15s."

"Three members have been assisted from the Convalescent Fund, £9 10s. being paid out. Mr. Sherwood and Mrs. Campbell gave £5 5s. each to this fund. There is now a balance of £428 12s. 11d."

"The management expenses are somewhat heavier than usual, the Secretary being paid up to date, which has not hitherto been done; 5000 reports were printed and distributed. It was also the quinquennial year for valuation, the Actuary's fee being £12 12s. Balance in hand, £65 4s. 3d."

In moving the adoption of this report, and a detailed balance-sheet that accompanied it, the Chairman said that the Society was fortunate in having been governed by good business methods from the very beginning. Referring to the several funds of the institution, the Chairman proceeded to say that they made the business of the institution exceedingly complicated, and paid a very high compliment to the Secretary for the admirable manner in which he has done the necessary book-keeping and other work. Mr. J. Hudson, V.M.H. (Treasurer), seconded the motion, and whilst expressing some satisfaction with the progress that had been made by the Society, continued to hope for greater results. The report and balance-sheet were accepted unanimously.

A proposition having been made that there should be printed 3,000 copies of the above for distribution amongst horticulturists, an amendment was moved by Mr. A. Galt, who sought to arouse the committee to the adoption of some additional means of advertising the Fund. There was considerable discussion upon this subject, several of the older members of committee being desirous that the management expenses should be kept to the smallest amount possible. In the end, Mr. Galt's amendment was carried.

The retiring members of Committee were re-elected, as were also the Secretary (Mr. Collins), and the Treasurer (Mr. Hudson). Votes of thanks were passed to the trustees and other officers, and to Mrs. Collins for the assistance she has given to the Secretary.

All young gardeners who are not members of the Institution should write to Mr. W. Collins, Martindale Road, Balham, London, for a copy of the balance-sheet for the past year, and a copy of the Society's rules.

A FLOWER-STEALER AT THE DRILL HALL.—

On Tuesday last, March 12, 1901, a spike of a matchless Orchid disappeared, and after the most careful search in all likely places it was not found. No one knew of its departure. We must again beware of those who are on the look out for fine things. The facts are these: Mr. Ballantine brought up the spike of *Odontoglossum Pescatorei* Veitchii from "The Dell;" I was going to have it photographed. Several people saw it in my hand as I showed it to Mr. Veitch, as the Orchid Committee sat down at 12 o'clock. For safety I laid it behind the Royal Horticultural Society's officers' tool-box. When the Committee rose from the table to judge the groups, I saw it in the place

in which I put it. When I returned in some ten minutes or less, immediately the groups were judged, it was gone. Remarks upon the object of the abstractor are almost needless; but I cannot refrain from saying that the condemnation he yesterday received, could it be put into print, would astonish him did he chance to read it. This is not the first time I have had to write and warn people of those who, at the very side of the Committees' tables, come and take flowers that they know are not theirs; they will possibly take them off the tables ere long, if we are not careful. This unique variety "Veitchii" is known to almost all who grow Orchids to any extent, and he who has taken it dare not show it to anyone, as he would thereby be convicted. This is carrying the "craze" for Orchids to the lowest ebb. Exhibitors beware! *de B. Crawshaw, March 13, 1901.*

Obituary.

WILLIAM IRONMONGER.—Horticulture has lost one of its best practical exponents by the death of Mr. William Ironmonger, who was for more than forty years one of the principal assistants in the nurseries of Messrs. Wm. Paul & Son, of Waltham Cross.

He gained his early experience in the gardens of Earl Cowper, Panshanger Park, near Hertford, and became one of the staff of the Waltham Cross Nurseries more than forty years ago. For many years he was a prominent figure at the exhibitions, the large specimen Roses then so much in vogue, and so finely shown by the firm, being grown and set up under his supervision. In 1877 he left Waltham Cross to take charge of one of Messrs. Wm. Paul & Son's branch nurseries, and retired four years ago.

He died at Ridgewood Farm, Uckfield, on the 9th inst., in the seventy-ninth year of his age. His great intelligence and integrity of character placed him on a high level in the esteem of his employers, and of all who came in contact with him.

GARDENING APPOINTMENTS.

MR. R. C. TOWNSEND, until recently Head Gardener at Aston Hall, Oswestry, as Head Gardener to J. B. AKROYD, Esq., Chalfont Park, Slough.

MR. ERNEST BRISTOW, Orchid grower at Leyswood, Groombridge, Kent, has taken the entire charge of the gardens at that place.

MR. WM. R. SPENCER, for the past two and half years Foreman at Abbotstown Gardens, Castleknock, co. Dublin, as Gardener to Mrs. COPE, at The Manor, Loughgall, co. Armagh, from April 1 next.

MR. T. PARROTT, four years Head Gardener at Freshford Manor, Bath, as Head Gardener to H. W. TUGWELL, Esq., Crowe Hall, Widcombe Hill, Bath.

MR. J. WATSON, as Head Gardener to Viscount GORT, East Cowes Castle, I.O.W., having removed from Abington Hall, Cambridge.

MR. E. FAULKNER, late Foreman at Highwood Gardens, Roehampton, as Gardener to A. ERYN, Esq., Gayton House, Blisworth, Northamptonshire.

MR. W. COLLIS, for the past two and a half years Foreman in the Gardens at White House, New Southgate, as Head Gardener to F. CRISP, Esq., at the same address.

ANSWERS TO CORRESPONDENTS.

CATTLEYA-FLY. *Waller.* The insect you send is the too well-known Cattleya-fly, figured in the *Gardeners' Chronicle*, vol. xxv., 1899, p. 23. All you can do is to carefully cut off and burn the affected bulbs. The *Dendrobium* is a good specimen.

CRICKETS IN GLASSHOUSES. *R. F.* Crickets being voracious feeders, and endowed with much inquisitiveness, may be caught in great numbers owing to these qualities, by sinking 8 inch pots bottom upwards in the floors of the houses, the bottoms being kept on the level of the floors. If these pots be baited with any strong-smelling food, the creatures will descend into the pots, but cannot return.

FINGER-AND-TOE IN BRASSICAS. *B. G. S.* Gather all the diseased plant stumps and burn them. Then dress the land with caustic lime and wood-ashes; and as a manure use steamed bone-flour. Change the crop. The "lumps on the roots as big as a man's fist," suggest the larvæ of the Cabbage Weevil, not Finger-and-Toe (Anbury). Can you not send a few samples of diseased roots?

IS THE SNOWDROP WILD IN BRITAIN? *Enquirer.* We will quote what H. C. Watson, the best authority on such matters, says in his *Topographical Botany* (1883), p. 398:—"It is reported from sixty-four counties. In very few instances is it suggested to be even probably native, unless by collectors, whose opinion would not be of any value in the question." And yet, according to Nyman, it occurs throughout almost the whole of Europe, except in Northern Russia and Scandinavia. It is difficult to understand why it should not also be a native of Britain.

LAWNS? *B. G. S.* Unless your clayey lawn be well drained with the drains 3 feet deep and 30 feet apart, running in the direction of the natural fall of the land—if any—you will not prevent the growth of moss. The drains in gardens, if trees are near, should be constructed of rubble put into a V-shaped cutting made at the bottom of the drains 8 inches wide and deep.

LILIUM GIGANTEUM. *Tartan.* Cover the bulb with about 2 inches of soil. Earthing-up, as with most other species, is not advisable or called for.

NAMES OF FRUITS: *O. G. E., Bess Pool, G. B.* 1, Hunt's Deux Ans; 2, If the specimen sent is a typical one, the variety is worthless and unknown.—*A. C.* Your Apples are as follows: 1, Rhode Island Greening; 2, Holland Pippin. Thanks for the particulars about the trees, correspondents seeking information can often assist by the statement of such facts.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*D. F. 1*, *Cœlogyne cristata* Chatsworth variety; 2, *C. cristata*; 3, *Abutilon variegatum.*—*H. J. G. 1*, *Thysanactis rubra*; 2, *Strobilanthes Dyerianus*; 3, *Selaginella viticulosa*; 4, *Hibiscus Cooperi.*—*A. L., Nottingham.* 1, *Cypripedium insigne*, winter and spring flowering; 2, *Cypripedium barbatum*, spring and summer flowering; 3, *Anthurium Scherzerianum*, spring, summer, and autumn; 4, *Odontoglossum citrosimum*, summer flowering; the last named should be suspended when its flower-spikes show, to allow of their drooping in accordance with their habit.—*Rex.* 1, *Selaginella Wildenowii*; 2, *Onychium japonicum*; 3, *Polystichum angulare*; 4, *Abutilon Savitzii.*—*Edwin Ballard.* *Berberis Beali.*—*H. C.* *Lonicera fragrantissima.*—*J. M.* One of the varieties of greenhouse *Rhododendrons*, raised and sent out by Messrs. Veitch, Chelsea.

NOTICE TO GIVE UP LAND USED AS A NURSERY: *C. S. B.* All demises where no certain term is mentioned are held to be tenancies from year to year, which neither party can determine without half a year's notice. But where the land has been held on such lax terms as those stated in your letter, and the rent as to amount and date of payment quite within the option of the tenant, easier terms, if desired, should not be impossible of attainment. You mention nothing about the stock of shrubs, trees, &c., in the soil. Will they be left or removed? If left, will compensation be demanded by the tenant?

PEACH TWIGS: *T. L., Horti, and others.* A common condition in which rings of the bark die from no obvious reason. Frost seems to be a cause, and in one case it was traced to an escape of gas. Galvanised wire has also been suggested. Injury from any cause will favour the attacks of a fungus, but the matter has not yet been cleared up.

COMMUNICATIONS RECEIVED.—G. Greene—S. A.—W. J. B.—J. L. & Sons—C. W.—T. G.—R.—Mendeli—J. H. L.—A. E.—Ayrshire—J. F. H.—M. B.—Debnam—G. B. M.—W. K.—G. M.—P. G.—W. J. T.—W. Pettit—G. M.—G. Woodgate—J. S. F.—F. T. M.—W. W.—E. C.—J. O'B.—A. D.—N. E. B.—T. S.—E. H.—W. H. S.

Continued Increase in the Circulation of the "GARDENERS' CHRONICLE."

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

TREBLED.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, and ALL CLASSES of GARDENERS and GARDEN-LOVERS at home, that it has a specially large FOREIGN and COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.

(For Markets and Weather, see p. xiv.)



THE GARDENS AT GREENWAY, DEVON, OVERLOOKING THE DART (T. B. BOLITHO, ESQ., M.P.).
PHOTOGRAPHED BY S. WYNDHAM FITZHERBERT, ESQ.



THE

Gardeners' Chronicle

No. 743.—SATURDAY, MAR. 23, 1901.

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View of the Lotus Pond in Mr. Oakes Ames' garden at Boston, U.S.A. (Supplement).	

FROST ON THE RIVIERA.

SOME of the readers of the *Gardeners' Chronicle* have written to me, and a few days ago a gentleman kindly informed me of the interest he has taken in my short communications about gardening in this climate, which rest solely on my own personal observations. This gentleman suggests that the very cold weather, which has been experienced here this winter, may have proved it illusory to cultivate many of those plants which I had named in my previous notes.

COFFEE GROWING IN SOUTHERN FRANCE.

It surely was not my idea to leave any of those readers who may take an interest in gardening here in the belief that everything is at its best in the gardens of Nice after so hard a frost, as taught by experience I have found that the after-effects of cold on plants cannot, in many cases, be ascertained till months have elapsed. I had succeeded in cultivating for some years about half-a-dozen plants of *Coffea arabica*, and one even flowered and produced fruits, which attained perfect development, though they were not yet ripe. Then came a sudden stroke of cold weather with snowfall (described in my communication of last year

to the *Gardeners' Chronicle* of May 19). My Coffee-plants were not protected in any way, but did not seem much the worse for the experience; so that when several days afterwards the plant in fruit was photographed for the *Revue Horticole*, it showed no other signs of suffering than that a few of the leaves were blackened. This was in the month of December, 1899. The following months showed, as usual, ups and downs in temperature, but no severe cold occurred before the night between March 5 and 7, when the temperature sank as low as 2° Centigr. below zero, freezing point Fahr., again accompanied by a snowfall. Still my Coffee-plants, which I had now furnished with a little shelter in the form of a small roof of cloth resting on sticks, lingered on, but commenced to drop their leaves—a bad sign in evergreen plants. The plant in fruit retained its fruits, and I thought that they might ripen at last. But little by little even the fruits fell off, and when summer came all my Coffee-plants were dead. Now I think that possibly these plants might have been saved if they had been protected from frost, but then the acclimatiser wants to know what degree of cold a given plant can resist, and is naturally prepared to lose them.

After this little digression, let me hasten to say, that my very modest garden is in every respect as unfavourable for delicate plants as it is possible to be in this climate. I did not select it just for this reason, but I needed sufficient space, and had to content myself with what I could get for my money, it having been my idea since early youth to have a "tropical" garden. By far the largest part of the steep hillside which forms my property has a northern and north-eastern aspect, the remainder being exposed to the east, and only a very small corner partly to the south. The soil is of the very worst description, consisting of layers of limestone rock, resting on beds of sand and gravel, while here and there some red clay forms a scanty soil on the surface of the rock. It will be understood that only by very great labour in breaking, crushing, and sifting, often only possible after blasting with powder, is it possible to make garden soil out of such material. Of shelter there is hardly any, except that the lower part of the hill, being exposed to the east, is not swept by the most pernicious of the winds here—the west wind (mistral); but then on the other side, on the lower part of the hill, the temperature sinks lower than on the higher part. The north wind has an almost unhindered access, and leaves the largest part of the garden much exposed to cold—in fact, some years ago the soil in the coldest parts was frozen uninterruptedly for weeks.

I think that I can safely assume that plants which I can succeed in growing in my garden will exist almost anywhere on this coast-line, at least at a certain altitude, say from 25 to 100 metres above sea-level; while in very many gardens they would succeed much better, the conditions of aspect and soil being so much superior. Thus, observations relating to my unfavourably exposed garden consequently have some practical importance, as in the case of plants to be acclimatised for utility.

When about nine years ago I started garden operations, I could find next to nothing published to guide in a practical way the person who wished to introduce new plants, or even simply to make a garden of plants whose powers of resistance were already known. There existed a few lists of plants, but without any indication of their culture. In V. Ricasoli's

pamphlets, *Della Utilità dei Giardini d'Acclimazione*, 1888 and 1890, are contained a few brief remarks in general on the resistance of certain plants to cold, but otherwise these pamphlets are little more than lists of plants without any special advice as to their culture. I need not give the titles of a few books, evidently only compilations from other works, and not based on local observations, but full of gross mistakes. The authors, who were certainly well-meaning, ought to have given their books titles suggestive of lists of plants which might be tried here with more or less chance. Since that time, a book of a competent author, Dr. Sauvaigs of Nice, has appeared, but it treats mainly of the already long-established plants of this region, taking less account of other plants than those of immediate utility.

Thus, not finding much to guide me, I have had to work slowly, and of course with very numerous disappointments, which—as I have found out little by little, but which might often have been avoided.

It may be useful to indicate the conditions by which I have succeeded in growing in the open those plants which are generally considered too tender—plants which in certain cases may contribute in a most eminent way to give that tropical aspect of vegetation which one expects to find here in the gardens, and which can be obtained to satisfy all reasonable expectation, and even be made to consist only of such plants which have proved resisting through the severest winters.

It is more than a month since the severe frost took place, and, at least for the greater number of plants, its effects can be judged already. I shall, therefore, give some information about its effects in general, leaving to later on to send more complete information.

PALMS.

Now, first of all, what strikes one is the immunity of almost all the Palms, which are by far the most important plants to give the tropical aspect to the garden. I cultivate about a hundred species (or supposed species). None of the *Cocos*, *Phoenix*, or *Sabal* have suffered. I name them first because these genera are represented by the largest number of species. The *Braheas*, *Erytheas*, *Washingtonias*, and, of course, very hardy Palms as *Chamaerops*, *Jubæa*, and *Trachycarpus* have not suffered. Of *Livistonas*, some very young seedlings of *L. Jenkinsii* have suffered; other species not. *Rhopalostylis sapida* has not suffered, neither have the two grand species *Archontophoenix Alexandræ* and *A. Cunninghamiana*. The *Howea Belmoreana* and *H. Forsteriana*, which, especially the last, succeed admirably here, have only suffered where hit by the sun-rays. The same remark applies to the *Chamaedoreas*, of which I have as yet never lost any. I think that it may be presumed that they are perfectly hardy when planted in conditions corresponding to those in which they naturally grow, namely, under trees and in shade. I have seen a few *Chamaedoreas* in gardens here, but mostly planted exposed to the sun's full force, perhaps for that reason not in a healthy state. I have found these Palms decidedly sensitive to the unbroken sunlight, and on the contrary prospering perfectly in the shade. I should like to call special attention to these exceedingly graceful Palms, as yet very rarely to be met with, because supposed to be too delicate. I shall here state how incautiously plants are sometimes declared delicate. Once I visited a horticultural establishment in a place considerably

warmer (more sheltered) than Nice. The owner showed me some miserably-looking *Livistona australis*, explaining that this was a species too delicate to cultivate in the open here. The plants were cultivated in pots and in full sunshine from morning to evening. I do not doubt that their miserable state depended on excess of heat rather than on the winter cold, and probably on insufficient watering. True, *Livistona australis*, like the other species, may prosper in full sunshine, especially with much watering, but I have always found the *Livistonas* succeed better and look of a fresher green and more graceful in partial shade. Let me here ask a question. When some time ago *L. australis* was stated to fruit in the isle of Jersey, is it to be understood that the plant was growing in the open ground and without artificial shelter? Should this be the case, then it seems to me that several other Palms, not named as cultivated in Jersey, are capable of growing there.

Besides the genera of Palms named, I, of course, cultivate others of which I possess representatives, but as I desire on this occasion only to give a short outline of the power of resistance of the plants cultivated here, I shall not name them now. Plant a garden of Palms as those I have named, and it can easily be understood that it can be made as tropical-looking as anybody could wish. A. R. Proschowsky, Grottes St. Hélène, Chemin de Fabron, Nice, France.

(To be continued.)

A CRESTED DAFFODIL.

SOME years ago we figured (March 31, 1888, p. 405) an Irish Daffodil named *Crom a Boo*, which was remarkable for the production of petal-like outgrowths from the outer surface of the corona. In that flower, if we remember rightly, what botanists call the "orientation" of the tissues was reversed; thus, while in the normal flower the vessels are placed on the side nearest to the centre of the flower, and the best cells (phloem) nearest to the outer surface, in these malformed flowers the position is exactly reversed. What the state of affairs may be in the flower now illustrated (fig. 70) we cannot say. In this flower the supernumerary crests originate from the inner surface of the tube, as shown in the sketch made by Mr. Burbidge from a specimen grown by Mr. Jenkins, of Hampton, Middlesex.



FIG. 70.—NARCISSUS, VAR. PRINGLES, WITH CRESTED TRUMPET.

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT ELSTEAD HOUSE, GODALMING.

ALTHOUGH the picturesque gardens and the extensive ranges of glasshouses belonging to C. L. N. Ingram, Esq., are for the present mainly used for the production of garden products for Mr. Ingram's use at other places, Mr. Bond, the gardener, keeps every part of the garden in as neat a condition as formerly. The nicely arranged specimen Conifers, the beds of shrubs and flowers, the lawns studded with Snowdrops, Crocuses, &c., all bespeak the salubrity of the district.

Orchids have always been prime favourites here, and many years ago hybridising was earnestly undertaken with considerable success, as witness the many beautiful hybrids shown at the meetings of the Royal Horticultural Society, among which were the handsome *Lælio-Cattleya Ingrami* (*L. Dayana* × *C. aurea*), *L.-C.* × *Sir Wm. Ingram*, *L.-C.* × *Fascinator* (*L. purpurata* × *C. Schroderæ*), *L.-C.* × *Chas. Darwin* (*L.-C.* × *elegans* × *C. maxima*), *Lælia* × *Lucy Ingram* (*purpurata* × *Perrini*); *Cattleya* × *Lady Ingram* (*Eldorado* × *aurea*); *Cypripedium* × *Capt. Lendy*, and *C.* × *T. W. Bond*, illustrated in the *Gardeners' Chronicle*, February 23, p. 217.

At present the greater part of the houses are filled with hybrid and crossbred Orchids in every stage of growth; and newly germinated seedlings can be observed growing on the pieces of tree Fern-stem enclosed in the glass cases, in which it is Mr. Bond's almost constant practice to sow the seeds. Some of the more interesting crosses are those made with *Cattleya citrina* and other species not commonly crossed; and a plant of *Lælia Digbyana* was observed having a seed-vessel approaching maturity, the result of a remarkable cross.

One of the houses entered was filled with plants of hybrid *Cypripediums*, such as *C.* × *Calypso*, *C.* × *Lathamianum*, and *C.* × *Leeanum*, which made a great display in this and other houses. These crosses of *C. Spicerianum*, which flower in the winter and spring, are well suited to decorative purposes, such as is here required. There were also in bloom a number of unnamed crosses of more or less merit, and *C.* × *T. W. Bond*, *C.* × *Captain Lendy*, *C.* × *Hera*, *C.* × *radiosum*, and a pretty rose-tipped cross of *C.* × *marmorophyllum*, having handsomely-marked leaves. In the next house to this one, *Phalænopsis* made a fine show of flowers on *P. Schilleriana*, *P. Stuartiana*, and *P. Aphrodite*.

dead Tree-Fern stems, which are thoroughly saturated before the seeds are sown on them; afterwards the water supply is poured on the bottom of the case, carefully avoiding the seeds, and the sheets of glass are kept over them until growth begins, when they are tilted more or less, according to the weather. A great deal of sunlight is permitted to reach the plants in most of the houses, and some of the success in securing good seeds may be due to this fact.

Fruit, which used to be so well grown by Mr. Bond, has had to give way to flowers, and the old Peach-house facing south has a rising stage, which is filled with *Dendrobiums*, most of which were raised on the place, which are now a mass of flowers throughout. The show comprises many varieties of *Dendrobium* × *splendidiissimum grandiflorum*, *D.* × *Ainsworthii*, and others of its class; *D.* × *chlorostele Owenianum*, *D.* × *Dominianum*, and hybrids of *D. Findlayanum*. With them are *D. nobile nobilius*, *D. n. Cooksoni*, *D. aureum*, *D. Wardianum*, and *D. crassinode*. The plants are finely bloomed, and Mr. Bond states that after the pseudo-bulbs were fully completed last year water was entirely withheld, and that since August last no water has been afforded them. During the month of August the lights were taken off the roof, and the house painted, the plants being meanwhile practically in the open air for a considerable period of time.

On the other, or north, side of the wall, a lean-to *Odontoglossum*-house was observed to be filled with healthy plants, some desirable varieties of *O. crispum* being in bloom. The space under the staging is planted with foliage plants and Ferns, and is kept constantly moist. The ventilation is confined wholly to the ventilators near the ground-level, which on one side admit the outer air, and on the other side that of the plant-house on the opposite face of the wall.

Then follow several more houses of *Cypripediums*; Rose-houses, which were formerly vineries; a warm-house for growing *Dracænas* and other decorative plants; Cucumber and forcing-houses which at times are used for some of the special Orchids; and a convenient conservatory, in which the plants were arranged in a pleasing manner. Numerous Carnations are grown in the open, as well as in pots, and the stock of them is strong and healthy. In one house two very useful decorative specimens are the result of an operation performed on a tree Fern, *Dicksonæ antarctica*, which was much too tall for the purpose for which it was required. The stem was cut across half-way down, the upper half potted, and it is now thoroughly established, and possesses a fine crown of fronds. The lower half was also repotted, and clad with plants of *Platynerium alcinorne*, and it is now an ornate object.

"LINDENIA."

The plants figured in the March number of this useful and elegant publication are—

GALIANDBA BATEMANNI, Rolfe, in *Gardeners' Chronicle*, 1892, ii., p. 431, tab. DCXXIX.—This is the plant generally but incorrectly known as *G. Baueri*. *G. Batemanni* is a South Mexican species, with dull orange segments, and a large projecting convolute lip, with a yellow throat and a large purple blotch in front. It grows on mountains enveloped in mist.

DENDROBIUM HOOKERIANUM, Lindley, tab. DCXXX.—This is the same as *D. chrysothos* of Reichenbach, and has racemes of large yellow flowers (9 to 10 cent. across); the anterior part of the lip is rounded, velvety, with raised sinuous lines, and two purplish-brown spots at the throat. It is a native of Sikkim and Assam, and comes between *D. fimbriatum* and *D. Brymerianum*.

ODONTOGLOSSUM CRISPUM "Quo Vadis?" tab. DCXXXI.—Flowers 8 cent. across, rounded, with broad undulate segments, white, with a very large purplish blotch; lip broadly lance-shaped, white, with a purplish-brown blotch, and a yellow throat. This plant designated as "Whither goest thou?" is sure to attract attention wherever it may go. M. Linden considers it the king of the *Odontoglossums*. It flowered in the wonderful collection at Moortebek, near Brussels.

CYPRIPEDIUM × *LATHAMIANUM* VAR. *LATISSIMUM*, tab. DCXXXII.—A cross between *C. Spicerianum* and *C. villosum*. Flowers 12 cent. across. Standard broad, narrowed at the base, white flushed with violet, and with a central purple stripe; lateral petals undulate, yellow, flushed with brown; lip purplish.

The large *Cattleya*-house was bright with varieties of *C. Trianae*, including a white variety that was very attractive. At the end, and on one side of this house, *Selenipediums* and *Cypripediums* are cultivated, of which some were in bloom, including *C. Rothschildianum* and *C. insignis* of the Chantini section, raised by Mr. Bond from true seeds. Among other plants noted were *C.* × *Euryades*, *C.* × *Ceres*, and a well-bloomed lot of *Lælia anceps*. In this house a number of plants of *Cattleya aurea*, which is a great favourite, were observed, and attempts are now being made to raise it true from seed, as also *Lælio-Cattleya* × *elegans* *Ingrami*. It is anticipated that the seedlings will vary in the quality of their flowers, although not crossed, some better and others less desirable than the parent. Another house contained seedling *Cattleyas*, *Lælias*, and *Lælio-Cattleyas*, many of them approaching the flowering stage. An interesting cross between *Cattleya citrina* and *Lælia purpurata* was commencing to grow, and other promising crosses were in their first stages of growth. The little cases in which the seedlings are raised in this house are about 8 inches wide and the same in depth at the back, the front being lower, so that the sheets of glass used to cover them have a slope. The bottoms of the cases are covered with strips of

MIGNONETTE IN POTS.

THERE are several different ways of growing Mignonette in pots. One of the most common is that of sowing the seed in 48's or 32's in the

are rooted well, to shift them into a 54 and onwards till the final shift into a 24. As the plants grow, the tops should be pinched out at intervals to promote a bushy habit. They should be kept neatly staked, when, by the time they are re-

lings thinned out to two, shifted as soon as required into a 60-pot. When the plants have grown strong, the weakest should be taken out, and a stake put to the survivor. The flower should be pinched out when large enough, and the plant allowed to break, when the strongest shoot should be selected, and the others pinched out. When this growth should be stopped depends a great deal on the height of the "umbrella," which should be about 2 feet 9 inches, allowing part of that for going in the pot. The "umbrellas" are easily made: a good stout wire is first made into a circle of, say, about 18 inches diameter; this should be made fast with wire to a stout stake at the top, the stake being perfectly in the centre; then other wires could be run round at different distances until a shape is formed to resemble an umbrella. The plants should be shifted on as required into a 24 or a 16-pot for flowering in. When the roots have begun to take hold of the new soil, the stake should be carefully taken away from the plant, and the umbrella placed in the same hole, so as to minimise the breaking of roots as much as possible. Hereafter, all that is required is to keep pinching the flowers out as they appear, and let all breaks grow, and carefully tie down on to the "umbrella," with a view to covering it. When it is well covered pinching should cease, and the flowers be allowed to develop, when it is wonderful what a pleasing effect it has when fully out; and the cultivator will feel well repaid for the extra labour it has cost him. They should be grown from the commencement as cool as possible, and kept near the glass. I find they succeed best in a mixture of good fibrous loam pulled to pieces and the fine taken out, some dried cow-dung, knocked up well, a little leaf-mould, a sprinkling of some reliable artificial manure, a small quantity of soot, with lime-rubble and sand. The varieties Machet and Miles' Spiral succeed best as umbrella subjects. W. P.

PRUNUS MUMÉ.

THIS is one of the earliest, if not the earliest, of its class to produce its flowers. It is a Japanese Plum of the Apricot section, described long ago by Zuccarini, in Siebold & Zuccarini's *Flora Japonica*, vol. ii., p. 29. There are numerous varieties, Siebold says many hundreds, differing mainly in the colour of the flower, which ranges from white to rose-coloured. The Japanese use the flowers to decorate their temples on the occasion of their festivals, and they produce dwarf specimens, which are held in high esteem. One of the highly-coloured varieties is figured in the *Revue Horticole*, 1885, p. 564. Our illustration (fig. 71) was taken from a plant exhibited at a recent meeting of the Royal Horticultural Society by Messrs. Paul & Son of Cheshunt.

TREES AND SHRUBS.

HAMAMELIS MOLLIS.

MR. BEAN, in a recent number of the *Gardeners' Magazine*, alludes to this species as in cultivation at Messrs. Veitch's nurseries at Combe Wood. It is very distinct from any of the older species because of the larger size of the leaves, and because they are furnished on the under side with a close, felt-like covering of hairs, whose softness is implied by the specific name. It was discovered by Dr. Henry in the province of Hupeh, China, and promises to be the best of the genus. Ed.

TWO RARE EVERGREEN OAKS.

Quercus densiflora (Tan Bark Oak).—This Californian species is one of the most distinct and interesting of all the evergreen Oaks. It is one of the rarest in cultivation; but there are two specimens, 12 to 14 feet high, in the Arboretum at Kew, in such good health as to prove its suitability for our climate. In California, owing to the different conditions under which it grows in various localities, the species vary considerably in size; but in the



FIG. 71.—PRUNUS MUMÉ: AN EARLY-FLOWERING JAPANESE APRICOT. FLOWERS WHITE TO ROSE.

autumn for winter and spring flowering. To my idea there is nothing sweeter than the scent of Mignonette in winter. There is also what might be termed the "bush" culture of Mignonette; for this method, a few seeds should be sown in a small 60-pot early in April, thinning the seedlings out to, say, three or perhaps four, and when they

quired to flower, they will be splendid subjects for house decoration, or for the flowering-house. But a more uncommon way than any, I think, is the umbrella method. Perhaps this is accounted for by the extra attention they require. For the culture of these, three or four seeds should be sown in a thumb-pot early in April, and the seed-

most favourable districts, which are said to be on the borders of the great Redwood forests, it reaches 100 feet in height. In the young and adult states the tree is handsome and symmetrical, and its value for the garden is enhanced by the persistence of the leaves through winter. The leaves are lanceolate, thick and firm in texture, and 2 inches to 4 inches long, the margins being rather coarsely toothed. The foliage is most striking in a young state, for the lower surface of the leaf is then covered with a whitish wool. Among the trees of California it is especially esteemed for its value in the process of tanning—a quality, however, which is said to be leading to its rapid disappearance. Botanically it is of interest as showing in its inflorescence a strong affinity to the Chestnut (*Castanea*). It ranges in a wild state from Oregon to the Santa Lucia mountains, in South California.

QUERCUS ALNIFOLIA (Golden Oak of Cyprus).

On the mountains of the island of Cyprus, where this Oak is indigenous, snow is said to remain on the ground for a month during the winter. It might be expected, consequently, to prove hardy in the south of England. At Kew it has never suffered from frost, and is quite healthy out-of-doors, but it grows slowly. It thrives better in the unheated wing of the temperate-house than outside, and would, no doubt, be very successful in Cornwall and similar places where Himalayan *Rhododendrons* succeed. To lovers of rare trees, whose gardens are situated in such places, it is worthy of especial note for the curious and (as regards hardy Oaks) almost unique beauty of its leaves, which are of a rich golden colour beneath. Out-of-doors this colour becomes tawny and dull as winter approaches, but under rather warmer conditions it remains quite bright through that season. The leaves are stiff and hard to the touch, round or elliptical, 1 inch to 2½ inches across, and furnished with a few coarse teeth at the edges. *W. J. Bean, Kew.*

DISEASED SEED.

(Continued from p. 378, vol. xciii.)

JUDGING from correspondence I have received, my attempt to explain Eriksson's theory of Mycoplasma was not a success. The point to be grasped is this: In certain varieties of Wheat and Barley the mycoplasma or protoplasm of the fungus is always present, mingled with the protoplasm of the grain itself; this mixture of fungus and corn protoplasm is present in every cell of the growing plant. Under certain unknown conditions of growth the fungus protoplasm remains quite passive, or undergoes no change whatever, and the corn plant reaches maturity perfectly healthy and free from rust, so far as the mycoplasma present in its body is concerned. Under another equally unknown set of conditions the mycoplasma or protoplasm of the fungus present in the cells of the growing plant separates from the protoplasm of the plant itself, and takes on the form of fungus mycelium, which eventually produces masses of spores that burst through the epidermis under the form of rust—the *Uredo* or summer form of fruit of *Puccinia*. The rust spores thus produced are scattered by wind, and in turn infect other plants, and thus the epidemic spreads. Eriksson admits two methods of producing rust, by means of the mycoplasma always present in the seed of certain varieties of grain, and by the floating spores, but considers that the greatest amount, and more especially the rust appearing earliest in the season, is due to the mycoplasma.

Now this is very different to the previously-recorded presence of mycelium in seeds that have been attacked but not killed by a parasitic fungus, as in the Gooseberry, Hollyhock, Tomato, &c. In these instances the mycelium present in the seed frequently passed into the young plant on germination, and in some instances produced fruit on the seedling even in the cotyledons; but assuming that one of these plants succeeded in maturing

seed, it is not at all probable that the seeds would be infected, no evidence of such a case is forthcoming. The presence of fungus mycelium in a seed that has been directly attacked by a fungus is comprehensible, but the statement that hereditary fungus plasma, capable of producing a disease when conditions are favourable, is always present in the seed of certain plants, would be a very serious matter if proved to be correct. Eriksson's theory very naturally caused quite a flutter amongst vegetable-pathologists, and many experiments have been made in different countries for the purpose of testing the accuracy of the theory; but up to the present, in every instance where proper precautions were taken to prevent external inoculation from floating spores, the plants remained perfectly free from rust; hence it is hoped that the theory is not supported by facts.

Leaving out of consideration the above theory, it is perfectly certain that many serious diseases are entirely due to the presence of spores of parasitic fungi adhering mechanically to seeds. When such seeds are sown, the fungus-spores germinate, and enter the tissues of the seedling, which sooner or later is destroyed by the parasite. Old and useless seed is too often the cause of the loss of a crop, but I hope to be able to convince some people at least that when seed is sown producing an average of 90 per cent. of healthy seedlings, the crop may yet prove a total failure, due entirely to the presence of fungus-spores adhering to the seed. The exceedingly small size of fungus-spores, combined with the fact that in many kinds the surface is more or less viscid or spiny, enable them to adhere to seeds, especially such as have a spiny, downy, or viscid surface; in fact, the slightest irregularity of surface on seeds or fruits is sufficient to enable spores to remain concealed and secure from being dislodged by any amount of movement to which the seed may be subjected before sowing. The best known illustration of this means of plant-infection is the case of smut (*Ustilago*) attacking our cereals, mainly caused by the smut-spores adhering to the grain, and attacking the seedling immediately after germination. The practice of treating grain with a solution of bluestone for the purpose of checking smut has been practised for many years, and proves more or less effectual in proportion to the number of spores killed by the solution. Other and more effective methods for preventing smut, bunt, and various other fungus diseases caused by the presence of fungus-spores on seeds are now known, the point aimed at in every instance being the discovery of some substance that will kill all spores present without injuring the seed.

As previously stated, growers of Tomatos firmly believe that in many instances the seed is infected with the fungus causing the "sleeping disease." A series of experiments that I have carried out has proved this idea to be quite correct, although in a manner very different to what I had expected. As is well known, the cleaning of Tomato-seed is a somewhat tedious operation on account of the amount of glairy viscid matter present, and even when the work is most perfectly accomplished, such seeds when moistened and specially examined show a certain amount of this sticky substance present. Samples of Tomato-seed were obtained from five different sources, a dozen seeds from each sample were soaked for three hours in pure distilled water, and afterwards examined microscopically. A certain amount of viscid substance, softened by the soaking, was present on every seed, and imbedded in this viscid substance thirty-seven different kinds of fungus-spores were found during the examination of the sixty seeds. Some of these spores could be recognised and named, others could not. Four spores of the well known Tomato-pest, *Cladosporium fulvum*, were met with on three seeds that were obtained from two different sources. These three seeds, along with several others, were kept in water and allowed to germinate; the fungus spores also germinated, and in every instance except two,

where the seeds were reserved for further experiment, the seedling at a very early stage was attacked and killed by the mycelium of the fungus that germinated and grew along with the Tomato seedling. This experiment, it may be argued, was unlike what would occur under more natural conditions; and it is certainly true that the Tomato seedlings were starved for want of proper food, and thus had no power of resisting the fungus. Nevertheless, the experiment is of great value as showing what fungus-spores when sown along with Tomato-seed can do under certain conditions; and even under the ordinary method of sowing Tomato-seed the plant has certainly a better chance, but even then the temperature and moisture also favours the development of the fungus—and although it may not kill the Tomato in the seedling stage, it may, as my experiments have proved, enter the tissues of the young Tomato-plant, and produce a disease at a later stage. Two of the germinating seeds having *Cladosporium fulvum* spores imbedded in the glairy mass were placed in sterilised soil and allowed to grow; one showed the rust-coloured spore-masses of the *Cladosporium* on the leaves when the plant was 8 inches high, the other plant remained free from disease. This experiment proves that when the spores of a parasitic fungus are sown along with the seed, the fungus sometimes enters the tissues of the seedling, grows along with it, and produces the disease at a later stage; and in cases where the seedling is not very vigorous, or receives a check at an early stage, it may be killed by the fungus before it shows above the soil. If this happened on a large scale, the first explanation to suggest itself would probably be that the failure was due to bad seed, whereas as is shown, the real cause might be due to something very different. *Geo. Massee.*

(To be continued.)

SUCCULENTS.*

(Continued from p. 152.)

MAMMILLARIA.—This, the largest genus in the order, consists of 360 species of small plants, often almost spherical in form, and covered with mammillæ. The flowers, instead of being produced at the tips of these projections as in *Leuchtenbergia*, are borne in their axils. The Mammillarias, with their regularly shaped stems covered with spines of different colours, are the most beautiful of all Cactaceous plants; the long red berries peeping out from amongst the spines add to their attractiveness.

They do well in a winter temperature of 50° F., but in summer it can never run up too high, as they delight in an abundance of sunlight and heat. Propagation may be effected by means of offsets, which are produced at the base of the stems. Grafting should be resorted to with the more delicate kinds.

Mammillarias are grouped in three sub-genera. In the first, which contains the largest number of species, the flowers are placed on the sides of the plants, *M. Bockii* is an example.

The second group is characterised by having the flowers in the centre of the plants, and by a groove down the upper face of each tubercle; *M. Nickelsii* and *M. tuberosa* belong to this section.

The third division consists of a few species with thick, wrinkled, spineless mammillæ. They at one time held generic rank under the name *Anhalonium*. *M. prismatica* and *M. fissurata* are examples. The latter is known in America as the Living Rock, on account of its great power to resist drought. Amongst so many beautiful species as is found in this genus, it is difficult to pick out a few of greater merit than the others. *M. applanata*, *M. bicolor*, *M. fulvispina*, *M. pusilla*, and *M. tenuis* may be taken to represent the genus.

PELECYPHORA.

This is a monotypic genus from Mexico, closely allied to *Mammillaria*. *P. aselliformis*, the Hatchet

* A paper read before the Kew Mutual Improvement Society by Mr. W. Brown.

Cactus, has flattened mammillæ, with two rows of hard scales in place of the spines of Mammillaria. It is difficult to get offsets of this Cactus, so it must be propagated by seed.

From the mammillate Cacti we go to those in which the tubercles have grown together and formed ridges on the stems of the plants, as in Echinocactus and Cereus.

ECHINOCACTUS.

Echinocactus, or the Hedgehog Cactus, comprises about 200 species, chiefly natives of Mexico, but spread from Texas in North America, to Chili in South America; some attain a large size. A specimen of *E. visnaga* brought to Kew some years ago weighed over a ton. The flowers are usually large and showy, lasting a long time. The spines vary much in size and colour; some are mere points, whilst others are 3 inches long, and often hooked.

Over-potting and over-watering are the evils to be guarded against in their cultivation. To secure offsets for propagation, it is necessary to take off the top of the plant; this causes the dormant buds to grow out and form branches. *E. Wislizenii*, the Fish Hook Cactus, is perhaps the most interesting. It has received its popular name from the fact that the large centre spine of each group is hooked, and has been used for fishing purposes in America. In *E. myriostigma*, also known as *Astrophytum myriostigma*, the groups of spines appear like tiny white dots on the plants.

E. Williamsii, the Dumping Cactus, is a curious spineless plant from Mexico; it has a tuft for woolly hairs in the centre, from amongst which spring the pale rose-coloured flowers. This plant is sometimes known as *Lophophora Williamsii*, also as *Anhalonium Williamsii*.

[Fine illustrations of species of Echinocactus were given in the *Gard. Chron.*, 1876 and 1877. Ed.]

CEREUS.

These, like the Echinocacti, have ribbed stems. The genus comprises some 200 species, chiefly Mexican and West Indian. *Pilocereus*, *Echinopsis*, and *Echinocereus*, at one time ranked as distinct genera, but are now regarded merely as sections of *Cereus*. True *Cereus* may be divided into two divisions, those species with erect stems like *C. giganteus*, and those with procumbent stems as in *C. rostratus*. The flowers are generally beautiful and showy, and all are easy of cultivation. The best mode of propagation is by means of cuttings.

C. giganteus is the largest of all Cacti, sometimes growing to a height of 70 feet; it is a native of Mexico, where it forms a characteristic feature of the districts in which it grows.

C. peruvianus is another species with erect branched stems. *C. speciosissimus* has erect three-angled stems, and is, as its name implies, the most showy of all. Amongst the weak-stemmed species, perhaps none equal *C. grandiflorus*. The flowers do not last more than six hours, but the plant seems to try to make up for this by adding to their beauty; they are also very fragrant. This species is well suited for the roof of a greenhouse, although small plants flower freely. *C. Macdonaldii* and *C. nycticalis* are splendid night-flowering kinds. Mention of *C. triangularis* is unnecessary, or of *C. flagelliformis*, with its slender rat's-tail stems, and pink flowers. Space forbids mention of the many other beautiful species and hybrids which are worth cultivation. *W. Brown.*

(To be continued.)

THE WOOD LEOPARD-MOTH (*ZEUZERA ÆSCULI*).

PERHAPS nowhere in the British Isles is the Wood Leopard Moth so abundant, or are its ravages on so extensive a scale, as in the London parks and gardens. Its attacks are principally confined to the Elm, Spanish, and Horse Chestnut, Mountain Ash, Beam-tree, Thorn, and Poplar; but it is a strange fact that although the specific name applies to the Horse Chestnut, few if any

observers have reported its attacks on that tree, while several have drawn attention to the omission.

In Greenwich Park, the reverse is, however, the case; for the depredations of the caterpillar of this moth are almost exclusively confined to the wood of the Spanish Chestnut, the Elm coming second, and various species of *Pyrus* and *Cratægus* following.



FIG. 72.—*ZEUZERA ÆSCULI*—WOOD LEOPARD-MOTH.
(MOTH, CATERPILLAR, AND CHRYSALIS.)

It is the upper half of each tree that is usually attacked, rarely the main stem or heavier branches, and when one tree falls a victim, numerous others in close proximity are affected; indeed, in one instance that came under my notice, almost every Chestnut-tree in a long avenue had fallen a prey to



FIG. 73.—BORINGS IN LIVING WOOD, MADE BY CATERPILLAR OF *ZEUZERA ÆSCULI*.

the depredations of the caterpillar of this beautiful and formidable moth. Rarely, however, have I known healthy trees to be attacked, but usually such as are in a declining condition, whether from age, unsuitable soil, or atmospheric impurities, the latter frequently around London. The tunnelling of the caterpillar soon causes a collapse of the woody tissue, and often so weakens the branch or stem that it readily snaps across in windy weather, but this is particularly the case with standard Thorns, or the Beam and Apple-trees when in a young state.

Often the presence of the caterpillar in these latter trees may be readily detected by reason of the curious swollen or thickened appearance of the stem or branch at the points of attack; indeed, in the park here some of the Mountain Ash and Thorns have an unnatural and unsightly appearance owing to these gouty growths.

The life history of the Wood Leopard Moth is interesting, but has rarely, from the difficulty of making observations, been told in its entirety. [The Wood Leopard-Moth was described by Curtis (*Ruricola*), and figured in the *Gardeners' Chronicle*, April 11, 1846, p. 236. Ed.] In early summer the yellowish-coloured eggs are laid singly in a hole or crevice of the bark, the larvæ, which require three seasons to attain perfection, eating their way during the first season into the soft wood immediately beneath the bark, when they are only about a quarter of an inch in length. The second season the caterpillar has attained to three-quarters of an inch in length, while in the third year, when full maturity is arrived at, the length is fully 1½ ins. A dirty or greenish-yellow would best describe the colour of the caterpillar, the body being indistinctly dotted with black, while the head and tail are of a conspicuous jet black. The jaws of the caterpillar are more powerful than those of any other native species, as will be readily inferred from the beautifully-cut tunnels in the stems and branches of the Thorn and Chestnut, even when the wood of these trees has become almost petrified through age or disease. They do not avoid the hardest wood, but would seem to tunnel quite indifferent of the texture of the timber through which they pass. It is interesting to note the size of tunnel made by the caterpillar at the various stages of growth, that of the first year being an eighth of an inch in diameter; that of the second, a quarter of an inch; and that of the third, frequently half an inch.

When about to enter on the chrysalis state, the caterpillar either betakes itself to the extreme end, or near the entrance of the tunnel, where it forms an outer covering by neatly lining the tunnel with small pieces of Chestnut leaves, and a cocoon by partly utilising the inner bark of the tree, the latter forming a case so strong that it can only be torn with considerable difficulty. Usually, the extreme end of a short gallery is used for hibernation, rarely a cavity near the entrance, which is proved by the fact that I have many examples of the former, and few of the latter. Occasionally several chrysalids are found end to end in the same tunnel. From these the perfect moths emerge the following spring. As far as my observations extend, it would appear that the caterpillar does not generally enter the chrysalis state till February or March, as I have found numbers of these in all stages of growth moving about in the galleries as late as the end of January.

As is well known to entomologists, the Wood Leopard-Moth is one of our largest and most beautiful species, the delicate colouring of the wings and striping of the body rendering it particularly distinct and handsome.

When fully expanded the wings are 2½ inches across, and the body about 1½ inch long. The wings are white, with yellowish-brown veins, a row of conspicuous bluish rounded spots running between every two, while the head and thorax is covered with a thick white pile, and the abdomen with a black down, fringed with white at each joint. The moth flies during the evening and night, and usually frequents open portions of the woodland, or fields and gardens that are surrounded by trees. Its lifetime does not appear to exceed two months.

It may seem hard to suggest the destruction of so beautiful a moth, but the amount of damage committed to timber by the caterpillar will be found sufficient reason for waging a war of extermination. To cope with the ravages is, however, by no means an easy task, unless in the case of small trees that are readily accessible for examination, for, as before stated, the tunnelling is usually engaged in

at a considerable height from the ground, and near the branch tips, where remedies are difficult of application. In the case of small trees, such as the Thorn and various species of *Pyrus*, where the entrance holes are readily detected, I have found the following methods fairly satisfactory.

1. With a piece of unctuous clay form a cup-shaped receptacle around the aperture, and fill this with gas-tar. The tar following the course of the tunnel generally kills or expels the caterpillar.

2. Insert a piece of cyanide of potassium into the entrance-hole, and plug with clay or wax to prevent the fumes escaping.

3. Plug the holes with a mixture of soot, lime, and cow-manure, the two former in about half the bulk of the latter.

4. A piece of pliable wire inserted into the hole has been successfully used in killing or dislodging the caterpillar.

Where a number of trees are attacked, and the top branches dying in consequence, pruning off and burning the dead wood will result in the death of large numbers of the caterpillar, and prevent the spread of these by doing away with the diseased or decaying wood, in which they seem to delight to form their galleries. As the caterpillars rarely attack the stems of large trees, this method of coping with the evil will be found both simple and satisfactory. *A. D. Webster.* [See report of the Scientific Committee, p. 193, of present issue. Ed.]

CULTURAL MEMORANDA.

ASPARAGUS SPRENGERI FROM SEED.

THIS useful trailer may be easily raised from seeds sown at this season. Seedlings, too, grow with extra vigour when they are once well started into growth, and in a few months form nice little plants, and make large and handsome specimens in one year if repotted into 6-inch pots. The seeds, which should be sown in some moderately light, finely sifted soil, soon germinate in a temperature of 65° to 70°, and when large enough to handle should be potted in small 60's, in turfy loam, leaf-mould, and silver sand. They should be afforded ordinary stove treatment. The long, trailing stems of this *Asparagus* rival in many respects the *Smilax*, that is so popular a material for dinner-table decoration, while the short growths are stiff enough to be of use in filling vases in the dwelling. The stems and shoots retain their freshness for a fortnight after removal from the plant if placed in water. *C. H.*

CONTINENTAL NOVELTIES.

BEGONIA PRINCESS ILSE.

A VARIETY of tuberous *Begonia* raised by H. Lattmann, Blankenburg. Flowers double, of the form of a *Camellia*, colour pale rosy-red; flower-stalk erect. The blooms seldom produce seeds, and propagation by means of cuttings has to be followed. Will prove a good market variety. *Die Gartenwelt.*

THE WEEK'S WORK.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. I. MEASURES, Esq., Cambridge Lodge, Flodden Road, Camberwell.

Lælia autumnalis.—This species is being imported in very good condition, and acquired plants should be potted forthwith, or be placed on the stage of the intermediate-house where the surroundings are humid, till the pseudo-bulbs have regained their normal condition. As soon as signs of renewed activity are observed, let them be potted, or placed in baskets. They require an abundance of strong light during the growing season. For this purpose it is desirable that a house or a part of one should be set apart for the Mexican *Lælia*, as when they are grown with other plants

it is not always possible to afford the amount of light necessary for ensuring good flowering; but where a house can be set apart for the different species and natural hybrids, the plants are of easy management. If shading be dispensed with, ample means of ventilation should be afforded; and abundance of moisture at the roots and in the air are other essential points in their management.

Imported Orchids.—There is no species of the *Cattleya* genus more troublesome to cultivate than *C. Mossiae*. The white forms of *C. M. Wagneriana* and *C. M. Reineckiana* are more satisfactory subjects to deal with, and the vigorous nature of their constitutions is illustrated by the success with which the plants may be re-established after being sub-divided. There are plants in my charge that have been in the collection for more than fifteen years, that were procured at the dispersal of a private collection, into which they had come from the Continent some years previously. I have dwelt at length on this peculiarity in the hope that some botanist who has studied these plants may be able to enlighten us as to the cause of the deterioration of the typical coloured species, when grown under the same cultural conditions as the white-flowered varieties. Speaking generally, they commence to deteriorate after they have been imported about four years. Importations of this species have already reached this country, and most orchidists will have replenished their stocks. My previous remarks in respect to the cleansing of imported Orchids holds good with these plants. The *Cattleya*-fly, which has been illustrated in the *Gardeners' Chronicle*, is, as a rule, innocently introduced to our Orchid-houses on purchased plants. Its presence may be readily detected on examining the rhizomes and older pseudo-bulbs, for perforations will be found on knotted substances generally, and where this is the case, there is never a doubt of the presence of the fly. The imported *Cattleyas* should be kept apart from the general collection until the first season's growth is matured, and the plants fumigated. If the fly remains after this, the growths should be removed and burnt.

Hints on Work in General.—The repotting of the plants generally will give plenty to do. The compost about the roots of cool-house Orchids should be carefully examined, and if it is found suitable for maintaining them in health to the end of the summer, it will be better to leave such undisturbed. If the compost about any plant is decayed from some cause, so that the roots may be liable to suffer, repotting must be resorted to without delay, so that re-establishment may take place before the weather gets hot. The summer months under the most favourable conditions are not the best for cool-house Orchids. The *Odontoglossums* and *Oncidiums* require careful management.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HUSSEY PACE, Esq., Prestwold Hall, Loughborough.

The Conservatory.—The occasional re-arrangement of the flowering occupants of this house always affords the gardener the opportunity to prune, cleanse, and arrange the growths of *Camellias*, *Polygalas*, *Begonias*, *Tacsonias*, *Passifloras*, *Fuchsias*, *Asparagus*, *Heliotropes*, *Swainsonias*, and *Kennedias*. After the flowering of *Habrothamnus elegans* and *H. Newelli*, let the plants be pruned, also those of *Clematis indivisa lobata*, by thinning out the weaker growths. Introduce plants of *Azalea indica* and *A. mollis*, *Richardias*, *Lilies*, *Genistas*, *Primulas*, *Cliveas*, *Cinerarias*, *Hyacinths*, *Tulips*, *Narcissus*, *Dielytras*, *Roses*, *Deutzias*, and *Lilacs*, in order to keep up the gaiety of the display.

The Rose House.—The permanent plants being now in bloom, the blinds should be used always during bright weather. Let the young growths of climbing *Roses* be tied in loosely, and apply artificial manure of an odourless nature to the soil. Water should be applied to the plants in the morning, and means taken by ventilating the house, &c., to dry it up. In dull weather damp the paths early in the day, so as to afford the requisite degree of moisture in the air. Admit air by the roof ventilators only. These can be left open a little longer on fine afternoons; and keep the side-ventilators closed, unless the external temperature gets above 55°. Remove pot *Roses* in bloom to the greenhouse or conservatory. The temperature of the house during the flowering of the plants may be kept at 55° at night, 60° by day, and 70° to 75° with sunheat.

Gardenias.—Select those plants which have the least forward buds, and place them in an intermediate-house so as to defer their time of flowering. The earliest batch of plants should be put into a temperature of 65° to 70° at night, and 75° to 80° by day, and the succession plants afforded 5° to 10° less warmth. Let the plants be syringed twice daily, and be afforded weak farmyard manure-water. The young growths usually produced at the base of the flower-buds should be removed or pinched at the first pair of leaves, in order to increase the size of the flowers, as after flowering, the older plants being cut over, it is useless to retain these young shoots. Take cuttings of half-ripened shoots from healthy plants, and place them in pots of sandy loam in a frame having a bottom-heat of 80°. Syringe them daily, and tilt the lights a little at night.

Azaleas.—As the early-flowering plants of *A. indica* pass out of flower, remove the seed-vessels and thoroughly syringe the plants with petroleum emulsion, in order to destroy thrips, before placing them in forcing-houses to complete their growth. Plants which are thin and shabby may be pruned hard back, cutting into the old wood, and then be placed in warmth of 60° to 70°, thoroughly syringing them two or three times a day till they break. The balls of such plants may be reduced in size by chopping off a good piece all round. Repot them in pots of the same size as that out of which they were taken; keep them in heat till the wood is mature and the flower-buds prominent.

Richardia Elliotiana.—Previous instructions having been followed, these plants will now be sufficiently advanced to be placed in their flowering-pots. I use for the strongest tubers pots of 10 inches in diameter, and pot all of them in turfy loam two-thirds, leaf-soil one-third, and as much sand as will give porosity; and in addition to each bushel of potting-soil 2 quarts of steamed bone-meal are added. The plants, when potted, should be put in a warmth of 60°, water being afforded in a moderate quantity till the pots are filled with roots. When in full growth, weak liquid-manure-water, or soot-water, may be frequently applied. During the flowering period and the summer months the plants may be stood in the greenhouse. Successive batches may be brought on, as a means of prolonging the show of spathes.

Poinsettias (Euphorbia pulcherrima).—These plants now being laid upon their sides under the staging of the intermediate-house or in a potting-shed, should remain in a dry condition at the roots till cuttings are taken for propagating purposes.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bicton, East Budleigh, Devonshire.

Cucumbers.—Plant out on hot-beds those raised early last month, keeping the plants fairly close, and lightly shading them for a few hours daily. Encourage the plant to grow freely for a few weeks by removing all dowers and fruits which may appear. Crop lightly when the plants have become established, and pinch all shoots at two joints beyond the fruits. Cover with mats, &c., at night, and see that the linings are renewed in time to prevent the heat getting too low.

Mushrooms.—Continue to make new beds every third or fourth week up to the end of April, and after that date it gets too warm for indoor Mushrooms, and no more should be made in the ordinary house. Allow a period of four to six weeks to elapse for the beds to come into bearing. As the days get warmer, the damping down of the house must be done oftener, but do not afford water to the beds whilst they continue productive. When water is really needed, it should have the warmth of 85°. Beds made in the open during May and June often produce abundance of very excellent Mushrooms. The materials should be formed into a ridge or ridges, 3 feet high and 4 feet wide, and be covered with straw or reeds to the depth of 6 inches.

Cabbage.—Plant in the quarters those that were pricked out thickly in nurse-beds in the autumn, carefully lifting each with a trowel, and making the soil firm when planting them. Plant at 15 to 24 inches apart according to the size of the variety.

Parsley.—If the supply of this herb is not abundant, roots may be lifted and potted, and placed in a gentle warmth. Make a sowing on a

sheltered border in drills at 1 in. deep and 12 inches apart. Thin early, allowing 6 inches from plant to plant.

Salads.—Radishes may be sown on a south border, or at the foot of a south wall, and the plants netted as soon as they are visible. Mustard and Cress may be sown under hand glasses in a sheltered warm corner of the garden, keeping the seed dark until it has germinated. Lettuces may also be sown in beds outdoors, in drills drawn at 1 foot apart. Those sown under glass at the end of January should be given the same kind of treatment as that advised for Cauliflower.

Marrow-bed.—Let a quantity of tree-leaves and stable-dung in the proportion of three of the former to one of the latter be thrown into a heap; and when the mass has got well heated, let it be turned and mixed together, and made into a ridge-shaped mass, and left untouched till planting time arrives. The Vegetable-Marrow is very productive if a slight lasting bottom-heat be afforded the plants.

Carrots.—A sowing of Early Horn or Sutton's Gem may now be made on a south border. Carrots of the Horn and short-rooted varieties should be sown monthly until the first week in July, the main crop being sown in April. I prefer to sow the seeds in shallow drills, 12 to 15 inches apart, and mix the seed with dry sand or soil before sowing it. The preparation of the land is the same as that advised for Parsnips in the Calendar of March 2.

Globe Artichokes.—Let the mulch of litter, &c., be removed, and then apply a heavy dressing of rich manure, and dig the land. Those plants which were potted in the autumn and have been wintered in frames, should be inured to the outer air, and in a week or longer they may be planted out either to form a new or repair an old plantation. It is a good mode of planting Artichokes to place them in clumps of three plants at 9 inches apart, the clumps being 2 feet from each other, in rows 4 feet asunder. In Devonshire gardens the suckers are simply taken from the plants in an old plantation, and set out in the new quarters in April. It is a good practice to make a plantation yearly if space can be afforded, the new plants affording heads late in the year.

THE FLOWER GARDEN.

By T. H. SLADE, Gardener to Lord POLTIMORE, Poltimore Park, Exeter.

Violas.—The beds in which Violas will be planted should be got in readiness for them, putting a layer of cow-manure several inches below the surface if the soil be light; and if retentive, applying spent Mushroom-bed manure or decayed stable-dung in the same manner, or digging it in by the ordinary mode. Violas succeed the best where the position is cool, or the beds are shadowed by buildings or tall trees standing at some distance away from them. No amount of water and no sort of soil or manure will suffice if these conditions cannot be afforded.

Dahlias.—The propagation of these plants from cuttings should not be any longer delayed; shoots about 4 inches in length, and taken off with a bit of the tuber, or simply torn off (slips) being very suitable. Let these be inserted singly in 3-inch pots filled with light, sandy soil, and place these in a hot-bed frame, with a bottom-heat of 75° to 80°, and a top-heat of 65° to 70°. When rooted, root them entirely, and aim at sturdiness of growth by the use of moderate temperatures and ventilation in mild weather. The stock roots may be divided, each piece having at the least two buds, and be potted into pots of such a size as will take the tubers without cramping them over-much. Till re-established, keep these in a warm house, and afterwards afford cooler (not cold) treatment till the middle of May, at which time they may be stood under temporary shelters till planted. Tall, ungainly plants may be cut down to half their height, and kept in moderate warmth till they start anew.

Plants in Tubs.—Specimen Sweet Bays, *Musa Ensete*, *Brugmansias*, and other half-hardy plants, should be thoroughly cleansed, slightly pruned, and regulated. If new tubs are wanted for any of them, this is a suitable season for seeing to this matter. If ordinary oaken tubs are used, let the staves be slightly charred on the inner side, also the bottom pieces, and give two or three coats of paint to the outside. Let a good application of

water be afforded all plants that have to be retubbed if the soil has an appearance of dryness. In the case of some of the plants, only top-dressing may be called for; water being afforded in their case before the operation is performed, and also afterwards.

Planting Shrubs, &c.—This sort of work should be brought to a speedy finish, with the exception of Conifers and Hollies, which may be planted next month and later. Examine all newly-planted subjects, and make them secure against the wind. I would advise all who may not have plants of Pruning Pissardi to make a note of this plant for purchasing next autumn; its early flowering, the abundance of its white flowers, and the pleasing coppery hue of the foliage, making it a most desirable plant.

Walks.—The annual trimming of the grass verges of walks and beds should now receive attention by taking off a thin slice of the turf with the edging iron. Where there are badly broken edges, or the line is not true, or the turf has been much reduced in width, the turf should be cut in strips 3 feet by 1 foot, or in squares of 1 foot, lifted with the turfing iron, and brought out to a little more than the desired distance, the space at the back of the removed turves being neatly filled with narrow strips of good turf, and all be well beaten. This being completed, the edging should be cut anew. Where there are curves in the lines, the true figure should be kept by means of wooden pegs and a garden line. The cutting of the edgings at this season will ensure a better work being done with edging-shears throughout the season. The repairing, gravelling of old, and the making of new paths, should be completed as quickly as circumstances will permit.

THE HARDY FRUIT GARDEN.

By C. HERRIN.

Cleaning and Dressing the Fruit Quarters.—After all prunings are cleared up and burned, rotten manure should be spread between the rows of bushes and about the trees, and the land lightly dug where the roots are, and deeper in the middle space, which is less occupied by the roots, and where all rubbish may be buried. Black Currants should be afforded a heavy dressing so as to encourage strong growth. Gooseberries and Red Currants require less. If any of the Apple, Pear, and Plum-trees are making very strong growth, no manure should now be applied to them; and on the contrary, trees well set with flower-buds should receive a full dressing. Where roots are near to the surface, the soil should merely be drawn away from beneath the bushes, the manure applied and covered with soil taken from the middle space. The Raspberry being a surface-rooting plant, the plantations should not be dug, but be merely dressed heavily with manure. In the case of quite young plantations, deep digging may take place for a couple of feet in width in the middle space, and it is here that weeds may be got rid of. The manure being spread, it may be covered with some fresh soil from the open trench.

Wall-trees.—Providing the nailing or tying of the trees is finished, the alleys should be raked and cleared of rubbish and weeds, and very lightly pricked over with a fork, and afterwards afforded a light mulch of stable-litter, which will be much better for walking upon when attending to the trees than the earth, and it will not exclude sun-heat. When pointing the alleys, remove carefully all suckers that arise from the roots, cutting them clean away at the point of origin. Pruning which has been unavoidably deferred, or that of newly-planted trees, should be finished without further delay. I advise the pruning of all newly-planted trees forthwith in preference to deferring it till next year, when the shoots must, in order to produce the number of branches required to form the foundation of the tree, be cut back to the same point, whereby a whole year is lost.

The Fig.—The winter covering should now be removed piecemeal, and when all is removed the trees should be pruned and trained. Allow a space of 9 inches to 1 foot between the shoots, crowding being detrimental to the production of good wood and good fruit. Root-pruning must be adopted with all over-vigorous trees, so as to curtail growth and induce fruitfulness. It may be sufficient to prune only one-half of the circumference of the root-mass up to within 2 feet of the stem in one year. If the soil is rich remove a considerable proportion of it,

and replace it with mortar-rubble and brick-bats, mixing these with the staple in the parts disturbed, making the whole firm.

FRUITS UNDER GLASS.

By MALCOLM MCINTYRE, Gardener to Sir CHAS. TENNANT, The Glen, Inverleithen, Peeblesshire.

Melons.—The earliest plants will now be making rapid progress, and fruit set or setting on the older laterals. During the time of setting the blooms, water should only be afforded in a quantity sufficient to prevent flagging. After such sunless weather as we have been having in all parts of Great Britain, the leaves will scald easily, and means must be taken to avert this mishap. The temperature may be increased by 5°, warmth being conducive to a good set. Fertilise the blossoms daily; pinch out the points of the shoots at the second joint beyond a fruit, and when the latter are generally of the size of a walnut, some more soil may be added to the hills or pots, making it quite firm, as the firmer it is about the roots the sturdier the bine will grow. All soil and manure for top-dressing should be warmed before applying them. The water that is applied should be tepid. The rims of pots should have zinc or slate put round them, in order the better to retain the added soil. If the bottom-heat be increased to 85° the swelling of the fruit will be assisted. The night temperature should now stand at 70°, that of the day 75°, ventilating from that point, and increasing the warmth to 85° or 90°, and closing at 85° sufficiently early to let it reach to 90° or 95°. All laterals that are not required should be removed, and not too much foliage allowed anywhere on the bine. On bright, warm days damp the house in the morning, and let the evaporation-troughs be filled with liquid-manure; otherwise sprinkle all available bare surfaces in the house with liquid-manure before nightfall. Plants growing in narrow borders should have liquid manure warmer than the air of the house.

Succession Melons.—Let the growths be trained in at regular intervals of time, and, if fruit be wanted at an early date, the points of the leaders should be pinched out, so as to throw some of the energies of the plants into the side shoots, and thus obtain an early set. Do not allow stray fruits to remain on the bine, but get the fruits distributed over all parts of the plants. Increase the quantity of moisture at the roots and in the air as the days lengthen. Pot off seedlings, shift into larger pots, and plant out as may be required. Sow seeds for succession. Melon-plants on hotbeds in pots and frames require a bottom-heat of 80°, and in newly-made beds of 90°. Renew the dung linings before the beds cool to any extent.

Cucumbers.—In consequence of the dull weather of late, the foliage will flag under bright sunshine, and it will be generally necessary to shade the plants for a couple of hours with some light material when the sun is brightest. Plants in full-bearing should be assisted with weak liquid-manure, and an occasional top-dressing of soil and manure. Do not apply fresh horse-dung in these dressings, as when used freely the ammonia sometimes causes injury to the foliage. If plants that have been in bearing for some time are to be retained a little longer, the exhausted soil should be removed with a small hand-fork, and warmed rich compost afforded in its place; then thin out the exhausted growths, and encourage the growth of fresh bine. As a means of expelling worms from the beds, put 1 peck of soot into 30 gallons of rain-water, stir it well, and let it stand for forty-eight hours to settle before using. Against canker at the collar and in the old growths, rub quicklime into the affected parts. Damp the floor in the early morning, at noon, and in the evening; syringe the foliage freely on warm afternoons, and let liquid-manure be kept in the evaporating-troughs; stop-laterals, and train the bine twice a week. Maintain a night temperature of 70° to 75°, and by day of 80° to 85° from sun-heat, and close sufficiently early for a rise to 90° to take place after having damped down abundantly. Afford a moderate amount of air early in the day, avoid sudden changes of temperature, and, above all, cold draughts.

Frames.—If stable-litter and tree-leaves for the making of hot-beds have been well prepared, beds may be made up, and linings from the same materials applied to older hot-beds that may be in need of them. The treatment of the plants resembles that advised for plants in houses.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, MAR. 26—Royal Horticultural Society's Committee. Public Meeting at Hotel Windsor, to form a Sweet Pea Society.

WEDNESDAY, MAR. 27—Liverpool Horticultural Society. Exhibition.

SALES.

MONDAY and FRIDAY NEXT.—Standard and Dwarf Roses, Fruit Trees, Japanese and other Lilies, Asters, Carnations, Stove and Greenhouse Plants, &c., Conifers, Shrubs, &c., at Protheroe & Morris' Rooms.

WEDNESDAY NEXT.—Consignment of Lilies, Tuberoses, Lily of the Valley, Iris, Roses in large variety, Davallias, Azaleas, Palms, Ferns, Aspidistras, &c., at Protheroe & Morris' Rooms.—Clearance Sale of Glass Erections, Heating Apparatus, Stock Pots, &c., at The Floral Nurseries, Croydon Road, Reigate, by order of Mr. T. Carruthers, by Protheroe & Morris.

FRIDAY NEXT.—*Odontoglossum crispum*, rare Hybrids, and *Cypripedium Charlesworthii*, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—44°.

ACTUAL TEMPERATURES:—

LONDON.—March 20 (6 P.M.): Max. 42°; Min. 38°.

March 21 (11 A.M.).—Fine, cold east wind.

PROVINCES.—March 20 (6 P.M.): Max. 46°, S.W. Ireland: Min., 88°, Devon coast.

Those who have been accustomed to associate the Metropolitan Show of the Rose Society with the Crystal Palace will, many of them at any rate, have received a rude shock when they learned that the exhibition for the present year will, with the permission of the Benchers of the Inner Temple, be held in their beautiful gardens, already associated with horticulture for the annual "Temple Show."

It must be remembered that the Society, founded by the Rev. H. H. D'OMBRAIN, has not always met at the Crystal Palace. Its first exhibition was held in St. James' Hall, in 1877. It was a wonderful exhibition, but financially an utter failure; and as a proof of what one has often heard asserted, that huge as London is, and perhaps for that very reason, there is no more difficult place to originate anything in, it was felt that it would be of no use to repeat the experiment, and consequently arrangements were made with the Directors of the Crystal Palace Company to transfer the exhibition to that building.

The first exhibition under the new conditions was held at Sydenham in 1878. From the first, although the Society was treated with the utmost courtesy, it was felt that it was in a dependent condition, and that there were many disadvantages connected with the Palace. It was out of the way, and those who had to drag their boxes up from the low-level station, or see them carried up by the company's servants, experienced many rude shocks. Nor was this all: in those days the Society never had the nave and transept to itself. The members of the German gymnastic societies, who were mainly supported by young men in business, chose that day for their annual gathering; the nave was filled with their apparatus, and altogether the noise and confusion did not very well agree with the quiet that was considered correct in a Rose show, and so it is not to be wondered at that when the Royal Horticultural Society made overtures to have the exhibition held at South Kensington, the request was cheerfully acceded to, and the exhibitions were held there from 1882 to 1887 under very varying circumstances: at one time in the conservatory and corridors, at another time under a large tent at the lower part of their grounds, and yet again in an out-

of-the-way place difficult to get at, and not very favourable when reached. Those were the days in which the Royal Horticultural Society was sinking deeper and deeper into the slough of despond; no help could be obtained from the Society, and everything seemed to portend a collapse. It was hardly to be wondered at that the eyes of the Committee and exhibitors again turned to the Crystal Palace; as the directors were then willing to give substantial pecuniary help. The number of exhibitors and members were increasing, and there was a desire that Sydenham should be once more the home of the Society; and so it was again found there in 1888. Of course, one great advantage was, that the Society was independent of the weather; it might blow and rain its very hardest, but there were no tents to be blown down. The only inconvenience from the elements was that on a bright hot day, notwithstanding the awning which used to be placed over the exhibition tables, the flowers suffered very considerably. But the Society was still at the mercy of the Company, and on one occasion it was shoved into the dark and gloomy concert room. Growls were heard on all sides from exhibitors, saying it was impossible that their flowers could be seen.

Another time, when the SHAH visited the Palace in 1889, a tent was used at the northern end of the Palace. Her Royal Highness the Princess of WALES had promised to visit the exhibition in the early part of the day while the judging was proceeding, but this arrangement was altered because the SHAH could not come to the Palace until 6.30 in the evening, and it may well be imagined in what ill condition the Roses were when they did come to see them. It was the more provoking, as this was the only time when the Princess of WALES had been able to visit the Society. There is little hope of her again visiting this show, but if she should do so, it will be no longer as Princess of WALES but as Queen ALEXANDRA.

And now, coming to more recent matters, there is no doubt that the Crystal Palace is not what it used to be; last year the subsidy could not be obtained until after repeated applications, and no positive assurance could be given as to the position of affairs this year; and the Company has reduced its contribution to the Royal Horticultural Society for their great autumn exhibition of hardy fruit by one half, offering them only £50 instead of £100.

What wonder then that the Committee of the Rose Society should try for fresh fields and pastures new; they tried various localities which had been suggested to them, the Royal Botanic Society, the Alexandra Park, and Earl's Court, but none of these seemed suitable, and so the Committee braced themselves up to a bold and vigorous effort; they approached the Benchers of the Inner Temple, and obtained permission to hold their exhibition in their gardens. A guarantee fund was formed, and the plan has been taken up with enthusiasm.

There are some, it is true, who doubt the wisdom of the step, but there can be no doubt that it has many advantages: it places the Society on a thoroughly independent basis; the exhibition is its own, the garden is easily accessible from all parts, and if we may judge from the results of the Royal Horticultural Society's exhibition, it ought to bring substantial help to the Society. The support of the Royal Horticultural Society is assured, as the able and indefatigable secretary, Mr. WILKS, has pro-

mised to render every assistance in his power, and the Society will also have the advantage of having the valuable aid of Mr. WRIGHT, the superintendent of Chiswick, who has so successfully managed the Temple Show for some years.

There is one matter in which many of the clerical supporters of the show will rejoice at, and that is, that the exhibition will not be held on a Saturday. We know that a large number of the clergy are deeply interested in the Rose, many of them, we may say a great many of them, are exhibitors, and one of their greatest treats in the year is to be present at the Metropolitan Show; but they have been obliged to hurry off, in order to get home for their duties on the following day. Now all this will be at an end. Rosarians will have a longer time to talk with their friends, and can either take a late train, or remain in London for the night. We have, we think, sufficiently shown how great are the advantages that may be looked for by shifting the place of meeting, and it now only remains for us to urge upon the members to endeavour to make the show a great success. This they can do by themselves coming to it, and persuading their friends to do likewise. They must labour to make it so successful that those who have kindly given their names as guarantors should not be losers, and that the Society may reap a substantial benefit, so that even should the day be unfavourable, the attendance may justify the steps taken by the Committee.

THE LOTUS POND IN THE GARDEN OF MR. AMES, BOSTON, U.S.A. (Supplementary Illustration).—Horticulture is receiving much attention in the United States, as might be expected with the immense increase of the general wealth of the community, and the rapid rise of a cultured and wealthy class. We have on former occasions alluded to the plant-treasures of Mr. AMES' garden, especially to his collection of Orchids, which we believe to be one of the best in the States. The tastes of the owner are not apparently all confined to the plants grown under glass, as is shown by the garden lake planted with Water-Lilies (*Nelumbiums*), the subject of our illustration. These plants show in their large foliage and general robustness of growth the favourable conditions under which they exist, and they afford, doubtless, a magnificent display of their lovely flowers in the summer months.

ROYAL HORTICULTURAL SOCIETY.—At a general meeting of the Royal Horticultural Society, held on Tuesday, March 12, thirty-two new Fellows were elected, making a total of 200 since the beginning of the present year, amongst them being the Duchess of SOMERSET, Viscountess BARING, Sir WILLIAM PREECE, K.C.B., F.R.S., Lady HYLTON, Hon. H. A. LAWRENCE, and Surgeon-Major CALDWELL, M.D.

— The next fruit and flower show of the Royal Horticultural Society will be held on Tuesday, March 26, in the Drill Hall, Buckingham Gate, Westminster, 1 to 5 P.M. A lecture on "Inconspicuous and Rarely Cultivated Orchids" will be given by Mr. W. H. WHITE, A.R.H.S., at 3 o'clock.

— At the fortnightly meeting to be held on April 9 in the Drill Hall, Buckingham Gate, special prizes will be offered for Daffodils, to be shown by amateurs and gentlemen's gardeners only. First prize, a £7 7s. Silver Cup, presented to the Society by Messrs. BARR & SONS; second prize, Royal Horticultural Society's Silver Flora Medal. The following conditions must be observed: "Group of Daffodil Blossoms" (*Polyanthus* varieties excluded). Must include some of each section:

Magni, Medii, and Parvi-coronati, must contain at least fifty distinct varieties of thirty of which at least three blooms each must be shown. Not more than nine blooms of any one variety may be put up. They must be staged in bottles, vases, or tubes, not exceeding 3 inches in diameter at the top (inside measurement), and all the stems must touch the water. Quality of flower will count more than quantity, and correct naming and tasteful arrangement will be duly considered. Any foliage may be used, that of the Daffodil or otherwise. No prize will be awarded unless there are two competitors at least.

VICTORIA MEDAL OF HONOUR IN HORTICULTURE.—The Victoria Medal of Honour in Horticulture was established in the year 1897 with the assent of Her Most Gracious Majesty the late QUEEN VICTORIA, in commemoration of the Diamond Jubilee of Her reign, and the limit of sixty Victoria Medallists at any one time was fixed to record that event. It has now seemed good to the President and Council to issue a Minute and Order of Council that the number of Victoria Medallists shall be increased to sixty-three, as a record for all years to come of the sixty-three years of Her late Majesty's glorious reign, and that such number should never hereafter be added to. There having been one vacancy in the original number at the time of Her Majesty's death, the President and Council acting on the above Minute and Order have made the following appointments to the list of Victoria Medallists, viz, Miss ELEANOR A. ORMEROD, LL.D., &c.; Sir GEORGE KING, K.C.E.I., M.B., F.R.H.S., F.L.S., &c.; Mr. GEORGE NORMAN, F.R.H.S.; and Mr. JAS. SWEET, F.R.H.S.

THE METRIC SYSTEM, whatever may be said against it, is so infinitely more convenient than our present idiotic weights and measures, that it is very wonderful that even British conservatism, should have been able so long to obstruct so practical a reform. Other countries have adopted the metric system with little difficulty, and not one has evinced the slightest wish to return to chaos.

THE VICTORIA MEMORIAL GARDEN.—*Indian Gardening* suggests the formation of a fine pleasure-garden at Calcutta worthy of the capital of India, and of the object to be commemorated. The subscriptions are said to be likely to amount to 50 lakhs of rupees, or £312,000—sufficient for the erection of a noble hall surrounded by a fine garden. It should be the people's garden—a source of pleasure to the citizens of Calcutta in particular, and of India in general, all the year round.

"THE AUSTRAL CULTURIST."—This is a Melbourne journal devoted to bees, poultry, and roses. The Rose section, under the title of the "Rose Growers' Chronicle," is the organ of the National (Australian) Rose Society.

SWEET PEA SHOW AT BOSTON.—In conjunction with the horticultural show to be held at Boston, Lincolnshire, on July 24 and 25, Messrs. W. W. JOHNSON & SONS, Ltd., have made arrangements to hold an exhibition of culinary and Sweet Peas. There will be eight classes for culinary, and ten classes for Sweet Peas. As many as 700 bunches of Sweet Peas were staged upon a similar occasion last year, and it is hoped that even a better result will be obtained on the forthcoming occasion.

THE CRYSTAL PALACE FRUIT SHOW.—The prize schedule for this show, we are informed, will be issued in a week or ten days by the Royal Horticultural Society, and will contain an authoritative list of dessert and cooking Apples, Pears, and Plums, post-free one penny. Donations towards the prize fund will be gratefully received by the Society.

THE YORKSHIRE GALA.—This important Floral and Horticultural Exhibition will be held in the Bootham Field, York, on June 12, 13, and 14, and as the City of York will not be excited this year in making preparations to receive the Royal

Agricultural Society, the promoters of the horticultural show may hope for a larger measure of success than was obtained in 1900. The Royal Agricultural Society's Show at York was a financial failure, and being held only a day or two after the Floral Fête, its influence upon that exhibition was evident to those of us who went north to meet the congregation of Yorkshiremen that may always be seen present at that event. The Committee this year, have issued a schedule sufficiently liberal in its provisions to attract exhibitors from near and far. Thus, £300 for Orchids, stove, and greenhouse plants; £200 for Pelargoniums, Carnations, Begonias, &c.; £150 for Roses and other cut flowers; £100 for fruits and vegetables, &c., making a total of £750. To the trade are offered four gold medals, one to the best exhibit in each of the following classes: A collection of Orchids; a collection of stove and greenhouse plants; a collection of decorative plants and bunches of cut flowers; and the best single exhibit of floral design, which may be shown in class 72 or separately. The schedule is a comprehensive one, and copies may be obtained on application to the Secretary, Mr. CHAS. W. SIMMONS, The York Hotel, York.

THE PROPOSED SWEET PEA SOCIETY.—A meeting is to be held at the Windsor Hotel, Victoria Street, Westminster, on Tuesday next, at 2.30 P.M., to proceed "with the formation of a National Sweet Pea Society." There seems little doubt that such a Society will be established forthwith, and that may be taken as evidence that in the opinion of many, the formation of such a Society is desirable. For our own parts we doubt the value of this over-specialisation, and should prefer to see a Sweet Pea Exhibition and Conference held at Chiswick under the auspices of the Royal Horticultural Society. It is to be regretted that the Society has not taken the matter up before, and obviated the necessity for a separate organisation and consequent dissipation of energy.

—At a meeting of the Executive Committee of the Bicentenary Celebration on Monday last, the Committee resolved that it was desirable to form a National Sweet Pea Society. A deputation from the meeting at Winchester House last week was received, with a view to collaboration, and the promoters were invited to attend a public meeting to be held on Tuesday, March 26. The promoters of the city meeting, reported in our last issue, have decided to abandon their scheme in favour of that of the Committee.

FLOWERS IN SEASON.—We have upon our table a bunch of particularly fine flowers of *Iris reticulata*, the netted *Iris*, from Messrs. KELWAY, of Langport. This plant is especially valuable, flowering, as it does, in favoured nooks in the open ground during the first three months of the year. The flowers are deep mauve, almost royal purple in colour, relieved with touches of gold. They have a delicate and distinctive perfume, resembling that of Violets or of Orris-root.

—We have received another consignment of Chinese *Primula* flowers, and this time they represent a strain of Messrs. JNO. LAING & SONS, Forest Hill Nurseries, London. Giant White is a very fine form indeed, and has companions in red and rose colours of various shades. The only double flower received is reddish-crimson colour, and very good. A number of flowers without frills, but with petals cleft in the centre, like a wedge, indicates that the "Lady" or "Stellate" *Primulas* are now cultivated by most seed firms. Undoubtedly they have their uses.

—Since writing of Messrs. LAING'S *Primulas*, we have received some flowers of the same popular plants from Messrs. BOWMAN & Co., Birchwood Nursery, Swanley Junction. Some eight or ten varieties were received, most of them ordinary ones, but two others show considerable variation from the usual type in respect to colour. One of

the varieties has rose-coloured flowers, the other is white. Both have yellow centres, which is developed to such an extent as to form the greater part of the flower. They seem to possess potential value.

ALEXIS DALLIÈRE.—We regret to have to announce the death on the 17th inst. of this gentleman, who occupied a leading position among the Ghent nurserymen, and was well known to visitors to the Ghent Quinquennials.

HORTICULTURAL CLUB.—The usual dinner and conversation took place on Tuesday evening March 12. Amongst those present were Rev. W. WILKS, Rev. F. R. BURNSIDE, Messrs. JAMES H. VEITCH, H. S. RIVERS, S. A. DE GRAAFF, GEO. BUNYARD, R. WILSON KER, SELFE-LEONARD, and the Secretary. An exhaustive address on "The Principles and Practice of Wild Gardening" was given by Mr. H. SELFE-LEONARD, but as the paper will appear, we believe, in the *Proceedings of the Royal Horticultural Society*, it will be unnecessary to give any abstract of it. The Rev. W. WILKS, in a few happy words, moved a vote of thanks to Mr. SELFE-LEONARD, which was gracefully acknowledged by him.

THE ACTION OF FROST ON PLANTS.—MM. L. MATRUCHOL and MOLLIARD, in a recent number of the *Comptes Rendus*, adduce evidence to show that under the influence of frost the nucleus of the cell loses water by exosmosis, so that death from frost is essentially death by desiccation, or drying up.

THE "BOTANICAL MAGAZINE."—The plants illustrated in the March number are the following:—

Hymenocallis schizostephana, Worsley, t. 7762.—This is the plant described in our pages, 1899, vol. i., p. 386.

Modecca senensis, Masters, t. 7763.—A curious and elegant climbing plant, with deeply palmately parted leaves, the terminal lobe largest; flowers about 1 in. long, funnel-shaped, greenish, fragrant. Native of Mozambique; Kew.

Cœlogyne Veitchi, Rolfe, t. 7764.—A species with deeply furrowed pseudo-bulbs, broadly lanceolate leaves; pendulous, many-flowered racemes, with white globose flowers; the lip is destitute of markings, but bears three rather obscure basal keels; column very short. New Guinea; Kew.

Kalanchoe Bentii, C. H. Wright, t. 7765.—An erect shrub, with long, succulent, dagger-shaped, opposite leaves, and terminal, many-flowered cymes. The flowers are about 1½ in. long, with a cylindrical white tube and a shortly four-parted limb; before expansion the segments are pink. Native of the Hadramaut district of S. Arabia; Kew.

Masdevallia deorsal, Rolfe, t. 7766.—This species was figured in our columns, 1890, vol. viii., p. 395.

THE ROYAL OXFORDSHIRE HORTICULTURAL SOCIETY will hold an exhibition on Tuesday, June 18, in the gardens of New College, Oxford. Most of the competitive classes are reserved for members of the Society, but five are open to all. An autumn show will be held on August 15 in the gardens of Mansfield College. There will be special competitions for cottagers at both exhibitions. The acting secretary is Mr. W. GREENAWAY, Paradise Square, Oxford.

PROF. BURVENICH.—We learn from the *Revue de l'Horticulture Belge* that M. BURVENICH, a gentleman well known to visitors to the Ghent Quinquennials, has resigned his professorship in the School of Horticulture. Since 1858, M. BURVENICH has been associated with the School in the capacity of lecturer in the departments of market-gardening and fruit-culture. M. BURVENICH was one of that pioneer band comprising the late VAN HULLE, and ED. PYNAERT, and RODIGAS, who have done so much to spread a knowledge of horticulture throughout Belgium. By the co-operation of these

gentlemen, and of Count OSWALD DE KERCHOVE, the *Revue de l'Horticulture Belge* was established. M. BURVENICH has been very diligent with his pen, both in Flemish and in French, and has been very active as a demonstrator and lecturer in the country districts, where his instruction has been highly valued. It is hoped that Prof. BURVENICH, though relieved of his academic duties, will continue his lectures to rural audiences.

THE "SOCIÉTÉ NATIONALE D'HORTICULTURE DE FRANCE."—The last number of the Journal of the Society contains a brief epitome of the history of the Society from its foundation in 1826 to the present time. It has had many names, but its organisation has continued practically intact during the numerous political vicissitudes to which it has been subjected, and its labours were not suspended even during the siege. When the Germans withdrew, and the Commune was suppressed, the ravages of the war were rapidly repaired by the energy of French horticulturists. The assistance rendered on that occasion by English horticulturists is also acknowledged. In 1860 the Society took up its quarters in a building which it had purchased out of its funds, and where may be found meeting-rooms, committee-rooms, and a hall for large meetings and special exhibitions.

THE LIBRARY OF THE NATIONAL HORTICULTURAL SOCIETY OF FRANCE.—M. GIBAUT, the Librarian of the Society, has compiled a very useful catalogue, arranged according to subjects, thus: periodicals (French and foreign), botany, agriculture, horticulture, kitchen gardening, arboriculture, fruit-culture, floriculture, and miscellaneous, with numerous sub-headings. The arrangement under headings is less useful in practice than might have been expected, owing to the difficulty of assigning certain books to their proper heading, or to the fact that many books placed in one subdivision might just as well be entered under another. An alphabetical list of authors is given at the end, which obviates some of the inconvenience to which we have alluded.

THE RUMPH ORCHARD NURSERY CO.—The hospitality of our cousins on the opposite side of the Atlantic is proverbial. An instance of it has lately come to our notice in the shape of a "pass," which admits the editor "until December 31, 1900, through all orchards and nurseries of the Company, with privilege of eating fruits in season. . . . The Company is not liable for results of eating too much fruit." Unfortunately, the pass did not reach us till 1900 had given place to 1901. We fear, however, that our engagements would not have permitted us to visit Evergreen Alabama, where we are told that Mr. E. M. RUMPH "will be pleased to furnish information of value to all persons seeking health, happiness, and prosperity," always provided that the visitor does not eat too much fruit!

THE RICHMOND HORTICULTURAL SOCIETY will hold its annual exhibition in the Old Deer Park on June 26, and in conjunction with this event will take place the southern exhibition of the National Rose Society. Richmond has always been remarkable for one of the best of suburban shows, but having entertained the Royal Horticultural Society there last season, and looking forward to being hosts to the National Rose Society this year, the Society should attain a reputation that will satisfy its highest ambitions. Schedules may be obtained from the Secretary, Mr. C. R. KING, 61 & 62, George Street, Richmond.

HORTICULTURAL EXHIBITIONS AT MANCHESTER.—The arrangements for the present year of the Royal Botanical and Horticultural Society of Manchester have just been sent to us by Mr. P. WEATHERS. They include a spring show to be held on April 18, 19, and 20, in the St. James's Hall; the usual Whitsuntide exhibition of Orchids, &c., to be opened on May 25 in the

Society's gardens, Old Trafford, closing May 30; an exhibition of Roses on July 13 in the Society's gardens; and a Chrysanthemum show on Nov. 14, 15, and 16, at the St. James's Hall.

FRUIT FROM THE CAPE, ETC.—Since our last report, the following consignments of fruit from the Cape have come to hand:—Grapes, 1930 cases; Plums, 1341; Peaches, 1969; Nectarines, 92; Pears, 613; Apples, 64. Jamaica Bananas, imported direct to Bristol, are now in the market.

APPLES FROM THE ANTIPODES.—The manager of the Orient R.M.S. Company informs us that the *Oruba* is now on her way here with 7100 cases of Apples, and the *Oceana* with 19,000.

TUNBRIDGE WELLS HORTICULTURAL SOCIETY.—We learn from the report of this society for the past year that, owing to a variety of causes, of which a few are enumerated—viz, the establishment of horticultural societies in the surrounding villages, from which the society once received much support; counter-attractions and amusements of various kinds, and the unwillingness of many gentlemen to allow their gardeners to exhibit in the competitions—the committee feel that they can only advise the members to discontinue the show—at any rate for the present. It has been suggested that in the near future it may be possible to form a fresh society on less ambitious lines, with a much smaller subscription for membership, and for the exhibition of the more interesting classes, such as Roses, herbaceous blooms, cut flowers, and fruit. The show might be held in the Great Hall only, where the success would not be so entirely dependent on the weather as it is at present. The expenses of such an exhibition would be comparatively much smaller, and the schedule might be so arranged as to encourage many amateurs who have only small gardens to compete.

THE CAMBRIDGESHIRE HORTICULTURAL SOCIETY will hold two exhibitions during the present year. The first will consist of plants, cut flowers, fruits, and vegetables, and will be held on June 11. The Chrysanthemum and fruit show will be opened on November 5, and will remain open during the two following days. Schedules of prizes may be obtained from Mr. ARTHUR MATTHEW, 20, Trinity Street, Cambridge.

THE CORNWALL DAFFODIL AND SPRING FLOWER SOCIETY have had a great honour paid them by Her Majesty QUEEN ALEXANDRA, who had been previously Patroness of the Society. The President, The Earl of MOUNT EDGUMBE, wrote and asked if Her Majesty would continue her patronage, and an answer came back, that owing to having been Duchess of CORNWALL so long she would be graciously pleased to do so.

CLEMATIS VILLE DE LYON.—This is a hybrid raised by M. VIVIAND MOREL between *C. coccinea* and *C. viticella*. It was shown at the Hybridisation Conference at Chiswick in 1899, where it obtained a Silver-gilt Medal. The flowers are 4 inches and upwards across, of a rich crimson colour. The plant is declared to be hardy, and free from liability to the disease which is so destructive to some of the older varieties. This Clematis is offered for sale by M. F. MOREL ET FILS, 33, Rue du Souvenir, Lyon-Vaise, France, to whom we are indebted for a coloured representation.

BEGONIA GLAUCOPHYLLA.—There may be seen an unusually good specimen plant of this Begonia in the temperate-house, Royal Gardens, Kew. It is cultivated in a suspended basket, and forms a grand pyramid about 7 feet in height. Mr. W. DALLIMORE, who has charge of this house, informs us that the specimen has been cultivated from a cutting taken two years ago. It will be covered in a week or so with pretty pink flowers. A good figure of this Begonia was given in *Bot. Mag.*, tab. 7219.

COTTON NETTING FOR FRUIT PROTECTION IN THE FAR EAST.—We understand that application has been made here for the supply of cotton fruit-netting (54 inches wide by 30 yards long), for use in the experimental orchards in the Southern Shan States, for protecting the trees from the depredations of birds and insects. It is proposed, we believe, to use the netting in the "natural" condition—devoid of dye or paint; and the result of the application will be watched with interest by those interested in this far-away quarter of the globe.

THE PALM-HOUSE AT KEW has been closed to the public for some little time past, owing to alterations that are being made in the arrangement of the plants. The alteration will be chiefly at the ends, where the large groups of pot-plants will be broken up in such a manner that the handsome specimen Cycads will be better displayed.

PUBLICATIONS RECEIVED.—*Society for the Protection of Birds.* The tenth annual report of this Society is a record of steady progress, though the work is somewhat hampered by want of funds. From the Imperial Department of Agriculture for the West Indies: *The Harmfulness of Bush Fires*, by H. A. Nicholls, M.D., author of *Tropical Agriculture*.—Botanical Department, Trinidad: *Bulletin of Miscellaneous Information*, January. Contains notes on: Cane Seedlings on Poor Ground, Coagulation of Rubber, Fungi of the Cacao Tree, and similar subjects. *Queensland Agricultural Journal*, January. This includes the usual agricultural, dairying, horticultural, orchard, and viticultural notes, and is prefaced by an account of the progress of the Journal, and a portrait of the Hon. J. G. Drake.—*Fernwork Papers.* Presented at a meeting of Fern students in New York, June, 1900, under the auspices of the Linnean Fern Chapter. These are interesting additions to the literature of a difficult subject.—*The Alga-Flora of Yorkshire.* A complete account of the known freshwater Algae of the county. By W. West, F.L.S., and G. S. West (second instalment).

NEW BULBOUS IRISES.

IRIS TAURI (Siche).—This new Iris (fig. 74) gives promise of proving the best of its group, both as regards hardihood and richness of colouring. It bears a general resemblance to *I. Heldreichi*, but is of a much darker colour throughout, and bears three flowers on each plant. The bulb is cone-shaped, 1½ inch long; the leaves are 4 to 6 inches long when fully grown, tapering, ½ to ¾ inch wide at the base, and have scabrous margins. Three flowers are produced in succession, each measuring 3 to 4 inches high, and about 3½ inches across. The dark blue falls are 1½ inch long, and are furnished with broad, ascending side-lobes; the blades of the falls are coloured intense purple-black; they are not flat as in *I. Heldreichi*, but are contracted in the middle, and a few linear spots of white surround the rich orange median ridge. The standards are depressed, scoop-shaped, much serrated, ¾ inch long; the styles, which are enclosed by the lobes of the falls, are purplish-blue in colour, the prominent, serrated crests of which are coloured richer blue, and are occasionally margined with white; the flowers are about the size of those of *I. Heldreichi* at its very best. They retain their rich colouring for a long period, lasting fully three weeks in good condition. This Iris flowered in the open about February 25, having endured without any protection whatever the month or so of wintry weather which preceded that date—the leaves and flower-buds were quite uninjured. The plant was shown in company with *I. Heldreichi* and other bulbous Irises at the Royal Horticultural Society on March 12.

IRIS TUBERGENIANA.—This new Iris, which received an Award of Merit when shown at the Royal Horticultural Society on February 26, and which was again shown at the same place on March 12, is in every way an acquisition to gardens. Horticulturally, it is a much

better plant than *I. caucasica*, and is in some respects equal to *I. orchioidea*, but the colour is not so brilliant, and the flowers are fewer. The plant produces a distichous tuft of polished green leaves, with whitish margins, and usually three flowers of a pale greenish-yellow tint, which are remarkable for the prominent hairy ridge on the blades of the falls. The blades are not blotched, as in most bulbous Irises, save for a little heightening of colour around the ridge, and a very few spots of olive-green. The standards are rather small and depressed, and are cleft into three lobes at the tips. The styles are two-thirds the length of the falls, and are not clasped by the side lobes of the falls, which are very rudimentary, and in some specimens entirely suppressed.

The plant has a slender bulb, and long, whip-like roots above a foot long, which retain their freshness and vitality for a long period. It delights in a warm place on the rockery or under a south wall—a situation which would serve to protect the flowers when they expand. The very long roots effectually

when a spare light is placed over them during long wet periods at any time of their growth. Another successful measure which I have frequently advocated in these columns is to clothe the soil over the bulbs with some low-growing herb. The Irises derive a real benefit from the association both from a cultural and artistic point of view. The chief trouble with a carpet of living plants arises from slugs, and this may, to a great extent, be remedied by working sharp sand among the plants early in the year. [Figured in *Gardeners' Chronicle*, March 17, 1900, as *Iris stenophylla*. Ed.]

Iris persica var. *magna*.—Scarcely so good an opinion can be entertained of this Iris as of the foregoing. The plant falls about midway in colour between *Iris persica* and *I. persica purpurea*, and from a horticultural point of view, is not so useful as either. It produces four leaves, longer and narrower than those of the type plant, and one flower, which measures 6 inches in height, and is coloured pale reddish-purple, paler (almost white) on the margins, and tinted lilac at the base of the



FIG. 74.—*IRIS TAURI*: COLOUR OF THE FLOWER BRIGHT VIOLET-PURPLE, WITH GOLDEN YELLOW RADIATING BLOTCHES ON THE 'CREST'. (SEE P. 190.)

prevent injury to the plants from drought by penetrating into the soil to a great depth.

Iris Heldreichii.—The good opinions entertained of this Iris when it was introduced to gardens last year, are likely to be materially strengthened as the plant becomes more fully known. Not only is it the best of the one-flowered section of the group to which it belongs, it is also the easiest to cultivate, showing a marked improvement in constitution under one year's cultivation alone. It is not particular as to soil, and will grow as well in ordinary loam as in specially prepared friable composts. As may be expected of a bulbous Iris, several colour forms have shown themselves in imported batches, some scarcely as good as the type plants, others showing greater richness of colour and vigour combined. It forces readily in a moderately cool house or frame, the flowers last about three weeks in good condition, and are very fragrant. The plants may be planted outside without disturbance when the flowers are over, and when weather permits, a little protection being necessary till they are perfectly hardened. Plants growing in the open require protection from rains and wind when flowering, and are best provided for

style branches. A broad, whitish band brightens the upper surface of the falls, in the centre of which runs the prominent yellow ridge, copiously spotted with rich brown. The blades of the falls are much reflexed, and are devoid of the usual blotch, save for a little heightening of colour around the ridge. The side-lobes of the falls are not so prominent as those of the type, nor do they enclose the styles to the same extent. It is a plant that would interest the expert rather than the gardener, as it has the weak constitution characteristic of *I. persica* and its specific varieties. *Geo. B. Mallett*.

ENQUIRY.

THE ELECTRIFICATION OF PLANTS.—A correspondent, "H. B. W.," would be greatly obliged by some reader of the *Gardeners' Chronicle* informing him how to proceed in the electrification of plants growing singly in pots, and also in a border, where there might be planted, say, about a dozen plants a foot apart. What is the best means of supplying the electricity—from battery or accumulators, and what current would be required? Any other particulars and information would be welcomed.

HOME CORRESPONDENCE.

FREESIA REFRACTA IN A COTTAGE GARDEN.

—In a small greenhouse at the end of a garden, 30 ft. by 50 ft., belonging to Mr. J. A. Atkins, Roxeth, Harrow, this pretty South African Iridaceous plant is represented by a number of plants in small 48 size pots, each bearing from ten to twelve finely-developed sprays of large white fragrant flowers with yellow centres. It is highly satisfactory to see such a display of it in a cottage garden, seeing that even yet many gardeners have failed to grow it successfully. The whole of the little garden gives an example of the good results of diligence and care. Both outdoors and in, there are excellent Mushroom-beds, the larger one, a raised bed outdoors, covered with litter and mats, being thickly set with Mushrooms in all stages. A frame has had, and still bears, a fine lot of double Violets. A herbaceous border surrounds the garden, and the front portion is devoted to showy flowers, such as Sweet Peas in summer, Carnations, &c. The spring flowers are in bloom, both indoors and out, and it may be said that Mr. Atkins, who is a successful exhibitor at the local show, makes the most of every inch of his space. *J. O'B.*

CHERRY-LEAF DISEASE. — Referring to your article on this subject in to-day's issue, I regret to say that the disease is universally prevalent in the Cherry-orchards of this immediate neighbourhood, these orchards having presented a melancholy appearance, owing to the dark brown withered leaves which have hung on the trees from September (at least) until now. Early in November I sent specimens to Mr. G. Massee, of the Kew Herbarium, who reported to me that the leaves were affected by the fungus *Gnomonia erythrostoma*, and quoted Frank's opinion that the leaves should be gathered and burnt. I am a new-comer to Kent, and have not been able to ascertain whether the disease has occurred before; some fruit-growers say it has, and believe it will disappear from natural causes. It is quite possible that they may be right, and that the disease only attacks trees which are predisposed to it by adverse climatic conditions. Last April we had remarkably warm weather from the 18th to the 23rd, the maximum in shade on the 22nd being 71.5° here. This no doubt brought out the leaves prematurely, and the cold weather that followed immediately (the shade temperatures on April 25 and 26 were max. 47.5°, min. 34.5°, with a bitter N.E. wind), must have given them a severe check. The proposed remedy of gathering all the leaves off the trees is, in the present scarcity of labour in these parts, a very serious matter, and, so far, none of the fruit-growers have attempted it. The most important thing now is to watch carefully the condition of the trees during the coming spring and summer, both as to leaves and fruit. It is to be hoped that some of the growers will do this, and report the result of their observations in your columns. If the disease is as infectious and as independent of morbid conditions in the tree as some specialists believe, I fear the Cherry industry in Kent (except perhaps as regards the Morello varieties) is doomed. *A. O. W., Maidstone, March 16.*

SNOW'S BROCCOLI.—We notice in your article on "The Quality of Seed," on p. 172 of the last issue of your paper, that you remark that we have sent you a sample of Snow's Winter White Broccoli, a valuable variety, but we do not suppose that even Messrs. Wrench, with all their practice and experience, could distinguish positively between the seed of this variety and the seed of any other variety." It struck us that the paragraph reads as if we had sent you a sample of seed, whereas we sent heads in order to illustrate the true variety of Snow's Broccoli. Pray excuse our raising this point, as we are happy to say we are mainly in full agreement with the rest of your article. We are quite sure that if we are to do our trade by Act of Parliament there will be an end to all confidence in what ought to be a trade, where confidence should be the basis of it, and equally we are sure that unscrupulous men will benefit more than others. *For Jacob Wrench & Sons, Ltd., A. Moss, Managing Director.*

AN INTERNATIONAL HORTICULTURAL EXHIBITION.—As one of the exhibitors at the International Exhibition in 1866, I was pleased to read the letter of "D." in your last issue, suggesting another exhibition on the same scale, to celebrate the

centenary of the Royal Horticultural Society. It would certainly meet with the support of horticulturists throughout the country. There ought to be no difficulty in providing a guarantee fund of £5,000, especially with the offer of Holland Park to hold the exhibition in. I well remember visiting Holland Park in 1864, and have never forgotten the impression it left on my mind of it being one of the most beautiful places I had ever seen. As your correspondent says, "the matter needs long consideration"; but if the exhibition is to be a success, the sooner the thing is settled the better. *J. Robson, Altrincham, March 16.*

FIREWOODS.—Can any reader refer me to any work in which I can find a tabulated statement of the flammable power of different woods, with a special view to their uses as firewood? Ash is said to burn well when quite green:—

"Ash when green

Is fuel for a queen;"

but I fancy that is an exception. Some woods, as the deals, burn up rapidly into a good flame; others only smoulder, and give no flame. Some burn steadily; others are unsafe from their dangerous spurtings. I am told that the New Zealand Fuchsia exorticata is absolutely non-flammable. *Henry N. Ellacombe.*

TESTING SEEDS.—It is now one of the recognised doctrines of the horticultural trade that quality and purity in seeds pay better, and secure far more enduring benefits to both vendor and purchaser, than have any efforts to deceive. Purchasers having had long experience, fully realise the truth of that doctrine, for they purchase and sow seeds with the assurance that what seeds they now obtain are good in germinating capacity. It was not always so; but the seed trade has immensely improved. Even such fact, however, does not always result in absolute success in raising seeds, because no seedsman can control bad treatment, improper watering, sour soil, or various harmful conditions by which seeds when sown may be envired; and failures after sowing are far more often due to such causes than to any imperfection on the part of the seeds. Even in relation to mistakes in sending one variety for another—always a possibility—yet how seldom is there cause for complaint. The system carried out in seed-houses is so good, and the need for the greatest care being exercised is so strongly impressed on all employees, that errors in this direction are rare. We have all been in the past too familiar with a practice, when any particular variety was not in stock, of sending something else as a substitute, without acknowledgment. If that practice exists at all now, it is only in those establishments that can hardly be classed as of the British seed trade. The chief weakness of that trade is found in its nomenclature, the same thing having a diverse appellation in every other seed list. That is exceedingly annoying, but still it is an endurable evil, if the thing itself be good; and it usually happens that it is the best things which have most appellations. But, on the whole, our seed trade is in a sound, healthy, and honest condition, and customers find their interests are well safeguarded. *D.*

THE NATIONAL ROSE SOCIETY.—The statement made at p. 173, to the effect that the executive of this Society have insured themselves against loss on the day of their London exhibition, shows that even rosarians can combine the wisdom of the serpent with the guilelessness of the dove. No doubt the insurance of one day early in July can be effected on far more reasonable terms, than the Royal Hoyal Horticultural Society could similarly insure its Temple Show of three days duration in the month of May. But there must be very many lovers of Roses who rejoice that the National Rose Society have resolved to hold their annual floral symposium in the Temple Gardens, rather than in that somewhat inaccessible building the Crystal Palace. Amongst these there are probably a large portion of the Fellows of the Royal Horticultural Society. I observed it was stated that the Royal Horticultural Society's officials were to be utilised largely in arranging the Rose show. Would it not be wise as tending to secure a big attendance, let the weather be what it may, if the Rose Executive agreed with Royal Horticultural Society's Council, to allow all Fellows of the latter Society the privilege of purchasing tickets of admission to the Rose Show through the Victoria Street office at half price up to the day preceding the show. Possibly in that way 1,000 tickets might

be sold that would not otherwise be purchased, but for the privilege thus offered to the Royal Horticultural Society. I do not suppose that the Royal Horticultural Society's Council would for one moment object to such an arrangement, and most certainly both Societies would be benefited. The Royal Horticultural Society might go so far as to place a certain number of Temple Show tickets at the disposal of those members of the Rose Society who may not be Fellows of the former at the same rate, and thus establish a very pleasing and practical principle of reciprocity. We may in time hope to see the National Dahlia Society breaking away from its Sydenham quarters, where it is far too much hampered by distance and restrictions. *A. D.*

APPLE LAMB ABBEY PEARMAIN.—At the last meeting of the Royal Horticultural Society, a dish of this small but very excellent Apple was submitted to the notice of the Fruit Committee. Although the fruits were scarcely ripe, the rich flavour peculiar to the variety was well developed. An Award of Merit was ultimately granted, a distinction that should have been accorded it years ago, as it is not a new variety. It is supposed to have been raised from the famous American Newtown Pippin, and derives its name from Lamb Abbey, near Dartford, Kent. It has been in commerce for many years, but is, I fancy, not so generally known as it deserves. It is a great and constant bearer, and sets such a profusion of fruit in some seasons as to call for a considerable amount of thinning. In habit it resembles King of the Pippins, and when once established, the trees are prone to form a profusion of flower-buds. I consider it to be one of the best late-keeping dessert Apples we have for a gentleman's garden. When I resided in the west of England, I often had the fruit in fine condition in the month of May. In Australia, I am told that this variety is grown under the name of Winter Pearmain, and that its quality is excellent. I gained this information from a gentleman well versed in Apple-culture when on a visit to England a few years ago, and who instantly recognised the variety when I showed him a fruit at Stoke Edith Park. The variety is mentioned by Loudon in the *Encyclopaedia of Gardening*, 1824. *A. W.*

APPLE BRABANT BELLEFLEUR.—Visitors to the Drill Hall, Westminster, on February 12 last would scarcely fail to notice a dish of typical fruits of this variety. Brabant Bellefleur is either of German or Flemish origin, and the tree crops well in most fruit-growing districts in this country, either as a standard or bush. I have known standard trees in Gloucestershire to produce large, highly coloured fruits, which would compare favourably in every respect with those produced elsewhere. It is a late-keeping cooking fruit, and in the West of England the tree crops well and regularly. *A. W.*

RELAXATION FOR WORKING GARDENERS.—Messrs. Clibrans will never, we think, regret the movement they have made in closing their nurseries at 1 o'clock on Saturdays. We have closed our whole establishment, nursery, seed warehouse, shop, and offices, each Saturday at 1 P.M. for twelve months past. I have every reason to be satisfied with the results. A staff, of course, remains on duty on Saturday afternoon to give necessary attention to plant life. *Hobbies, Ltd., Dereham.*

RULES OF HORTICULTURAL SOCIETIES.—The committee of the Berwickshire Horticultural Society do not define, in the rules of their schedule, what constitutes an amateur, or what a gardener; but state verbally that an amateur is an exhibitor who does not employ a gardener regularly, and that a gardener is any head gardener who may exhibit his employer's garden produce, and enters in his own name, paying the 3s. subscription; or any garden labourer who wishes to exhibit, even when showing his cottage garden produce only. Some of the committee think the latter should exhibit in the amateur class—amateur! The committee have hitherto allowed amateurs "who wish" [to do so] to compete in both classes by paying the gardeners' subscription; but a gardener must not compete in an amateur class. Some think, if an amateur will compete against gardeners, he should leave his own class or pay both subscriptions, i.e., 2s. and 3s. The new members of committee and many gardeners in this district wish the Editor of the *Gardeners' Chronicle* to give his opinion on these

points. *J. Hamilton.* [We agree in your definition of a gardener. We think the garden-labourer should exhibit in the amateur class, and should not be allowed to compete against professional gardeners. Certainly the gardener should not be allowed to compete in the amateur class. The schedule has no provision for "open" classes. *Ed.*]

LATE PEARS.—Having read in the *Gardeners' Chronicle* many opinions on varieties of Pears that ripen late, I should like to be allowed to give a short list of such as do well and keep well at North Frith Gardens. I am using Olivier de Serres at the present time; they have been in here since about the second week in January; also Josephine de Malines. I have just used up Easter Beurré. Duchesse de Bordeaux keeps late with me, which is a very pretty Pear, and of good flavour. Marie Benoist is also a good late Pear and fine flavour with me, grows to a large size, also crops well. I would advise every gardener to give it a trial who has not got it. *E. Coleman.*

A SUCCESSFUL SOMERSETSHIRE FARMER-NURSERYMAN.—A good soil produces good trees; good trees produce good fruit; good fruit, properly marketed, produce a good price; all of which are satisfactory, but to get them there must be another good thing, i.e., good management, such as is afforded at New Cross, South Petherton, Somersetshire. The soil of that place is a deep, yellow, sandy loam, rather close in texture, and very adhesive when wet. The trees which Mr. Hebditch, the owner, grows are chiefly Apples of standard form, there being a greater demand for such locally for orchard planting than for dwarfs or pyramids. On a day late in last November, I had the pleasure of a chat with Mr. Hebditch, and his assistant, Mr. B. Attfield, meanwhile, was superintending the packing of a waggon-load of standard trees. These were very well rooted, straight in the stem, with nicely shaped heads. They consisted of well known varieties, and although specially adapted to the district, succeed equally well in other soils. Probably the prettiest trees in the nursery are the Ecklinville seedling, which Mr. Hebditch swears by, both for standards and dwarfs, and can scarcely grow enough of it to supply the demand. The stems averaged 6 feet in height, and the heads formed almost naturally. It fruits well, and at a very early age for a standard tree, some fruits coming on the feathered stem. A few other varieties may be named, viz., Winter Peach, Peasgood's Nonsuch, Prince Bismarck, Cox's Orange Pippin, Bramley's Seedling, Beauty of Bath, Devonshire Quarrenden, King of the Pippins, and Tom Putt, the latter a favourite west-country variety, and all the trees ranged from three to five years old. Of the younger trees, rows of maiden trees of Bramley's Seedling were noticeable from a long distance by their strong, sturdy growth. A nursery road and a Myrobellia hedge divides the nursery from a 7-acre plantation of dwarf trees, of from three to eight years of age. At the upper end was a large breadth of Lane's Prince Albert Apple, a very free fruiter, and good for marketing. Cox's Orange Pippin is very prolific annually, as are Cellini, Ecklinville, Lord Suffield, The Queen, New Hawthornden, Newton Wonder, Bramley's Seedling, Frogmore Prolific, King of the Pippins, Stirling Castle, Prince Bismarck, Peasgood's Nonsuch, Lord Derby, Lord Grosvenor, Cox's Pomona, Mr. Gladstone, and Duchess of Oldenberg. The trees of Bramley's Seedling are six years old, and just beginning to bear freely. There are several other smaller plantations of older trees. The orchards are much better managed than the majority in the west country. There are very few cider varieties remaining in the orchards, as all of those that could be grafted were headed down and regrafted several years back, and they are now bringing in better profits. Altogether there are nearly 40 acres of fruit-trees, orchards, nurseries, and plantations. The fruit is sold chiefly to private customers in various parts of the country, and Mr. Attfield, who also manages this part of the business, has numerous regular customers in London, who are also supplied with anything or everything that can be produced on a farm. The prices realised for the produce are excellent. *John Eittle, Weston-super-Mare.*

ROOTS AND PLANTING.—Before purchasing, a certain amount of thought is required as to what trees to have, but still more so as to their previous growth and roots, the soil and locality on and in which they are raised. It is not merely the

that a root is a root, and that a much or little-rooted tree will grow anywhere. This is scarcely so. In buying, the fitness of the root development must not be neglected any more than the soil and position that they are permanently to occupy. The very slender in fibre will not do well at first, or if at all, in heavy clays or loams; while the thick and woody are not suitable for light, sandy, and peaty soils. In planting and tree-shifting, experience teaches that the slighter the change, the quicker the plant or tree adapts itself to its surroundings. It is by no means uncommon to hear or to read that "our stock is well rooted, and full of fine fibres;" or that "the soil on which our young stock is grown being light, grow fibres well." All this, doubtless, is fact, and the result shows a general healthiness; but then comes the next and most important consideration: "Are such-and-such rooted and densely-fibred plants suitable or proper for the locality and soil for which they are intended?" Long years of observation have tended to teach me this. It is not well to have trees or shrubs from a sandy or peaty ground to plant in that of clay, stiff loam, or of a calcareous kind, and for this reason: in the one the growth will be a network of fine, thread-like rootlets; in the other it should be much thicker, less slender, fewer, and further-reaching to gain its sustaining food. Yet naturally fibrous peat-rooting plants may be grown in their early stages in a friable loam, or alluvial black mould, and then such would prove in similar soils their adaptation; but if these were put into pure peat, then an entirely fresh root-action must ensue before vigorous growth can be effected. So it is in the same variety of plant according to soil; the roots assume different forms and degrees of woodiness, or fibrous density. Then, if this be so, it is imperative that the intending planter should endeavour, if possible, to get his young trees from a nursery or other place in which they are reared, that has a surface and subsoil resembling in some degree that of his prospective orchard, garden, or field; by this there is less chance of disappointment or check, the more so if his land is a little better than that from which they are taken, though of the same kind and character. A finely, densely fibred and rooted tree, put into a stiff soil that does not crumble, and where no mould gets between the rootlets, the latter become pressed together, water-logged, and rot. Fungus often makes the well-doing of a plant impossible, and disease and ill-condition are the results; while in the case of suitable roots for suitable soils, the chances of successful development are minimised. Again, another note. Observation tells us that it is usual to employ two men in fruit-tree planting, one to hold the tree, while the other fills in, &c. This is needless, and the tree can be, and generally is far better and more carefully treated by one efficient man. This is the right method, and I have found it in every way so. Before commencing to plant, the station of every tree should be marked by a stake, put in at the exact spot the tree is to occupy. Then the man comes with the trees and a spade. He digs a hole of the right size and depth, drives the stake down in the centre, places the tree to it, ties it at the top and bottom of the stem, and then stoops and lays out the roots and fibres, carefully putting in appropriate soil between, above, below, or about, and spreading each in its place; after which he covers all in, and then on to the next, and next. By this plan there is no hurry, but thought and care are taken, and the tree is rightly, fully, really, and properly planted, and early vigorous growth is not a doubtful quantity, but, "weather permitting," a certainty. *Harrison Weir, Poplar Hall, Appledore, Kent.*

SOCIETIES.

ROYAL HORTICULTURAL. Scientific Committee.

MARCH 12.—*Present:* Dr. M. T. Masters, F.R.S. (in the chair); Rev. W. Wilks, Prof. Boulger, Dr. Russell, Dr. Müller, Messrs. Houston, Douglas, Bennett-Poë, Saunders, Sutton, Rendle, McLachlan, Michael, Bowles, Worsley, Hogg, Chapman, Gordon, Prof. Church, and Rev. G. Henslow, Hon. Sec.

Double Flowers, production of—Mr. Douglas contributed the following additional observations on this subject. He said, "I can speak of the Carnation and Picotee only from my own experience, and from what I have seen of the garden or German Stock. I have worked upon the Carnation over thirty years, raising a considerable number annually, and always saving the

seed from the best double flowers, and the very best varieties in the various classes. Taking the average of seasons, I get 5 per cent. double flowers as good as the parents, 12 per cent. single flowers, of every shade of colour favoured by the Carnation. This would leave 83 per cent. of double flowers, but in no respect equal in form to the parents. The finest lot of choice varieties I ever had was in a hot, dry season. The plants were well supplied with water, and many one-year-old plants produced upwards of 200 blooms each. I remember discussing the production of Stock seed some ten years ago with Mr. John Ward, then, as now, a market grower at Leytonstone in Essex. Speaking from his own experience, he informed me that he always obtained the largest percentages of double-flowered Stocks when he saved the seed from plants grown in pots. Subsequently I was being shown over a large establishment in Germany, where enormous quantities of seed were saved, and I found that all the best Ten-week Stock seed was saved in Germany exactly as Mr. Ward saved his seed in Essex. Thousands of flower-pots about 5 or 6 inches in diameter were arranged on a wooden staging fully exposed to the open air, and I was also informed that it was necessary to grow the plants in this way to make sure of the seed producing a large percentage of double flowers. The Poppy has a greater tendency to produce double flowers than any other plant known to me, and certainly the tendency is greater in rather exhausted soil, as can easily be proved by allowing a bed to sow itself from the previous year's bloom, and the plants to flower on the same ground without making an addition of soil or manure to the bed."

Abutilon Hybrids.—Professor MARCUS HARTOG sent the following communication with specimens from Queen's College, Cork:—"I send you herewith specimens of some of my new Abutilon hybrids. The male was Abutilon megapotamicum, and the mother-plant a hybrid of the Darwini Boule de Neige type, which we called 'Petticoat,' from its wide-open habit. This plant is an exceptionally free seeder; its flowers are orange, streaked with brown, and its leaves show very little trace of variegation. The hybrids all show a marked transverse depression at the insertion of the deltoid calyx-lobes on the tube, and most of them show colour in the calyx, like the male, and some sign of deep red or purple spotting in the depths of the corolla, which in most plants is elongated like the sire. The one that I have called Blanche has a much more spreading corolla, of more substance than the rest, with a clear tendency to become pleiomerous—to double, in fact."

"*Variegation* is very irregular, even in the open ground, and becomes very slight in the winter quarters. It appears as a margination, gradually increasing till the only dark green parts lie along the greater veins. Again, in the open, some of the plants exhibit a marked purpling of the parenchyma on either side of the veins, which I have seen in no other Abutilons."

"All these hybrids agree in a much more free-branching habit, with greater fullness of growth than any others that I know. The more erect ones send out more numerous lateral branches, and do not become 'leggy,' while the spreading ones produce numerous branches that fill up the centre of the plant, and keep it from looking straggling. The summer flowers are at least half as large again as the winter ones that I send. The plants were raised from seed in the autumn of 1899, kept through the winter in a cold orangery, where they made no progress to speak of, and were planted out at the end of May last year. In the autumn they were potted-off, and have been kept in a greenhouse, far too crowded for them to do well. I may note that among the Abutilon hybrids that we have, the roots are almost always swollen with galls, produced by the nematode *Heterodera radiculicola*, with which the mould *Thielavia Hartogi* (Butler) co-operates. These galls formed the subject of an interesting research by Dr. Butler, now cryptogamist to the Indian Government, and a preliminary abstract of it was published in the British Association Report for 1900 (Dover). I have found the addition of soot to the soil useful in checking this disease, though I am not sure that it stops it. Though interesting from a scientific point of view, the Abutilon flowers were not thought to be improvements upon existing plants in cultivation."

"I take the opportunity to show an inflorescence of a hybrid *Saraca (indica × tetrandra)*, raised by the late Wm. Crawford at Lakelands, Cork, and acquired by gift from his executors when the collection was broken up at his death. These hybrids, of which we have five distinct forms, are singularly ornamental shrubs for the stove, where they flower for nearly three months, beginning in February."

Carnation leaves decayed.—Mr. W. B. VERNON, of Oswestry, sent some leaves decayed at the tips of a pink Malmaison, observing that the browning of the apex of the leaves occurs almost every year about this time. They were sent to Dr. W. G. SMITH for examination and report.

Late-flowering Chrysanthemums.—Mr. HOLMES sent a blossom of Lady Canning, with the following observation:—"I have never seen a flower so late as this before. It was in

a pot in a cold house, and has been in blossom since the week before Christmas. I also send a fasciated stem of *Daphne Cneorum*."

Snowdrops, diseased.—Dr. W. G. SMITH sent the following report upon specimens submitted to him:—"I regard the Snowdrops sent from last meeting of the Scientific Committee as attacked by the Botrytis stage of the fungus *Sclerotinia galanthi*. This was described and figured by Mr. Worthington G. Smith (*Gardeners' Chronicle*, 1889); Mr. George Missee describes it in the *Kew Bulletin*, No. 124, and in his latest text-book of plant diseases. I found the Botrytis form of spore working its way up the green parts of plants sent; now these are a shapeless mass with the Sclerotium stage present in numbers. As to remedy, I can suggest nothing better than the measures mentioned about a year ago in a report to the Committee on Daffodils attacked by same disease."

Mistle in the Oxford Botanic Gardens.—Inquiries having been made as to the origin of the numerous plants and varieties of *Viscum album* now on various trees in these gardens, the following observations have been received from Mr. T. E. JEFFERIES, Oxford:—"I understood from the late Mr. W. H. Baxter, that his father established the plant on Apple-trees growing in a slip of ground outside the garden western boundary-wall many years ago. Now it is met with in, or adjacent to, the gardens on perhaps a greater number of different kinds of trees than could be seen in a similar area anywhere, and probably the diversity of their forms is equally exceptional. On fresh specimens the size of the fruits vary considerably, the largest fruited plants being rendered far more striking as regards their whiteness, or, as may be said, their effective translucent appearance, more especially where they aggregate in clusters and become distinguished by being so prolific." Mr. BURIDGE records the fact of *Viscum* growing on the following trees:—"Ostrya vulgaris, Horse-chestnut, Pavia flava, Lime, Maple, Hawthorn, Apple, Willow, Beech, and Viburnum sp., but very weakly on the last two. Outside the gardens it grows on two Poplars."

Cattleya, Monstrous.—Mr. COLEMAN exhibited a form of *Cattleya*, which Dr. Masters undertook to examine.

Leopard Moth.—Mr. GORDON referred to the damage done by the caterpillars of this moth in boring up branches of the Spanish Chestnut, Apple-trees, &c. He asked for information as to how long the caterpillar lived. Mr. McLACHLAN observed that the caterpillar (illustrated on p. 185) really bored upwards through the pith, and not downwards, as is usually supposed. The only remedy was to insert a wire and kill it by probing. The fumes of cyanide of potassium was another remedy, if they could effectually reach the caterpillar. As to the duration, two seasons were required to complete the transformation, while the goat-moth caterpillars took three years.

Apple, rotten.—Mr. HUSTON exhibited a remarkable case of decay, which had begun in the centre and spread uniformly outwards, so that the sound part came away like a hollow shell, leaving the perfectly spherical decayed central mass. There was no apparent fungus or other cause to account for it.

Crinum sp.—Mr. WORSLEY exhibited some stolons of a species of *Crinum* known as *jamaicense*. It is found in Jamaica, on the N.E. coast, near the sea, exposed to the N.E. trade winds. It is an unrecorded species, and since the peculiar method of propagation by fleshy stolons, one joint of which swells into the bulb, are characteristics of North America. It was Mr. Worsley's opinion that it was derived from that country by ocean currents floating the seeds or perhaps bulbs to the shore of Jamaica.

Specimens from Trinity College Gardens, Dublin.—The following specimens were received from Mr. BURIDGE, with the following remarks:—"1. Herewith I send two or three sheets of Birch-bark paper, from *Betula utilis*, *D. Don* (= *β Bhopattra*, Wall). It is written that paper was first invented and made by the Chinese; but I suppose the Birch trees of both East and West (vide Longfellow's poem of 'Hiawatha'), to say nothing of the wasps, made paper long before even the Chinese." Note how sensitive it is to heat and moisture. It is difficult to prevent its becoming a natural scroll. Was it the origin of all scrolls of bark, and afterwards of animal skins, used as a writing surface or paper? We have three trees, the largest 20 feet high, and we value them very highly, not only for their silver-stemmed beauty, especially during winter, but especially because they were born and raised here from seeds, which Sir J. D. Hooker, K.C.S.I., &c., sent to the gardens eighteen years ago. In the same packet came seeds of the Himalayan Bird Cherry, *Prunus (Padus) cornuta*, with its old bronze-coloured bark, now 25 feet high, and it flowers and fruits freely every year."

"2. Flowers of the old greenhouse plant, *Canarina campanulata*, of the Canary Islands (1696), vide *Botanical Magazine*, t. 444.

"3. *Salvinia natans*. As to this, note its waterproof coating of short hairs, which carries down an air film if the plant

be temporarily submerged; note also its life-boat like habit of 'righting' itself when placed into a vessel of water. Like 'Duckweed' (Lemna), Azolla, and other aquatics, it robs all submerged plants of light, &c., by its (and their) habit of forming a dense green mosaic on the surface of the water. Azolla kills or crowds out Lemna minor here in sheltered open-air tanks.

"4. *Acacia sphaerocephala* (? = *A. cornigera*), 'Buffalo-horn Acacia,' myrmecophilous (vide Belt, T., *Naturalist in Nicaragua*, Svo, London, 1874). Note the big hollow spines, in which the ants live; and also the yellow waxy secretion and exudation at the tips or apices of the young leaflets. I do not think this substance has received any chemical study. This 'ant-manna' seems to be of no actual or direct service or relief to the Acacia, as are some secretions; the resinous secretions that at times close the absorptive and secretive glands on the leaves of the *Rosa alpina* for example. In any case, it would be a step forward to know exactly what this yellow wax-like leaf product really is.

"5. An Indian 'Dodder,' growing on Ivy in cool greenhouse here, *Cuscuta reflexa*: Hooker, in *Himalayan Journals*, Minerva Library, 1891 edition, p. 27, says:—'Dodders (*Cuscuta*) covered even tall trees with a golden web. This species is so rampant that it might have been one of them. It will grow on Ivy, Pelargonium, Cotonaster, Calceolaria, Carex, Jasmine, Forsythia, Cytisus, Fuchsia—indeed, nothing seems to come amiss, and it is even self-parasitic (like the Mistletoe), this phase of its life-history having been discovered by Dr. Henry H. Dixon, of the Physiological Laboratory, Trinity College, Dublin, a few years ago, and described in the *Proceedings of the Royal Irish Academy*, as also in *Notes from the Botanical School of Trinity College, Dublin*, No. 4, January, 1901, chap. xvii., p. 146. The plant flowers freely late in summer or autumn, the flowers being white, and not unlike those of a small Lily of the Valley (*Convallaria*) bells, having a honey-like perfume, which is very attractive to flies of many kinds. Azolla filiculoides, on water in muddy outdoor tanks here, is now a lovely copper-red colour. I see Hooker (loc. cit. supra), p. 255, mentions Lake Catsuperi, alt. 7,150 feet, bordered by a broad marsh of bog moss, in which was abundance of Azolla, colouring the waters red."

ORCHID. EXHIBITION, PARIS.

FEBRUARY 28.—The Société Nationale d'Horticulture de France held an Orchid Show on the above date, when the exhibits were good and numerous.

M. O. DOIN, of Paris, sent (not for competition) some remarkable plants, including two pretty hybrids, *Lobelia-Cattleya* × *flavola* (*Selrodere* × *cinnabarina*), and *L. tigrina* (*L. elegans* × *prasiata* × *O. Aclandiae*). M. DOIN also staged *Phalenopsis grandiflora*, in fine order; an excellent *Cattleya speciosissima*, *Cypripedium Rothschildianum*, with four flowers on a raceme; and other Orchids.

M. CHARLES MARON, of Brunoy, sent some hybrids familiar in England and in France; *Lobelia-Cattleyas* *Yellow Prince Senart*, *Lucasiana*, *Captain Percy Scott*, *Impératrice de Russie*, *Ernesti*; *Cattleya* × *Hernina* (parents unknown), *Lobelia* × *negrescens*, *Cattleya* × *Astrea* (*Skinner* × *Loddigesii*), and *Lobelia Jongheana*; a fine set, for which a Gold Medal was awarded.

Among other collections including good plants were those of M. PLETIERS, of Brussels; M. DUGER, head gardener, Château du Monastère Ville d'Avray; M. GEORGES MAGNE, private grower, of Boulogne-sur-Seine; and M. L. DUVAL, of Versailles, who sent interesting hybrid *Cypripediums*. M. RAYOT, private grower, of Meaux, staged two plants of *Cattleya Percivaliana* in great beauty, with extra large flowers; and C. Trianae, with white sepals and petals and a violet-amberlyst lip; M. BERANEK sent three *Cymbidiums*, and *Centria* *Hadweni*; and M. MAILLET and M. BÉTON also showed some well-grown Orchids. G. T. Grignon.

LINNEAN.

MARCH 7.—Professor S. H. VINES, F.R.S., President, in the Chair.

Mr. F. ENOCK, F.L.S., showed a series of lantern slides illustrating the metamorphoses of a Dragon fly, *Ecdia cornuta*, and gave an interesting account of the life-history of that insect.

Mr. H. E. SMEDLEY, F.L.S., exhibited and made remarks on a collection of models of fungi, *Nepenthes*, *Sarracenia*, and *Aroids*, as also several models of sections of flowers, in wax and composition.

Dr. J. MURIE, F.L.S., on behalf of Mr. H. DOUBLEDAY, exhibited an Orange within an Orange, the enclosed fruit having a complete rind; in which respect it differed from one previously shown by Dr. Rendle (*Proc. Linn. Soc.* 1899-01, p. 7).

Mr. ALFRED O. WALKER, F.L.S., read a paper entitled "Contributions to the Malacostracan Fauna of the Mediterranean," in which he gave the results of dredging operations carried on at Cannes and Hyères from an open boat, in depths not exceeding 35 fathoms, and with the simplest apparatus.

Miss G. LISTER'S paper on "The Occurrence in Egypt of *Tristichia Hypnoides*," Spreng., communicated by Mr. Arthur Lister, F.R.S., F.L.S., was read by the Secretary, and some remarks thereon were made by Dr. Rendle.

GENERAL AGRICULTURAL EXHIBITION, PARIS.

MARCH 9.—An Agricultural Exhibition was opened in the Palais des Champs Elysées (in the Exhibition grounds), Paris, on the above date. Horticultural exhibits filled the centre space, and were tastefully arranged.

Near the entrance was a semi-circular border full of fresh and pretty flowering plants: Azaleas and Rhododendrons, interspersed with Hyacinths, small Lilacs, Clematis, and *Bougainvillea glabra* *Sanderiana*. This collection was shown by M. LELLIEUX, of Paris, who also sent a fine group of tall Palms.

A similar border was filled wholly with forced Lilacs, almost all double flowered, very beautiful, and sent by M. BOUCHER, of Paris. Vases on marble columns arranged among the borders were filled with flowers by the Maison LACHAUME, of Paris. In one vase were Lilies of the Valley, in another mixed Hyacinths, in another Tulips, in another Cyclamen, and in yet another Chinese Primroses. Each group was arranged with foliage, and was nearly 3 feet high.

Further on was a small group of forced Lilacs in pots, from M. NIKLAUS; there were also Palms and evergreens from MM. CROUX ET FILS; fine Conifers and evergreens from M. MOSER, of Versailles; well varied and arranged groups of flowering trees and shrubs, from MM. CROUX ET FILS, of Val d'Aulnay, and M. PAILET; *Prunus triloba*, *Magnolia Yulan*, *Wistaria sinensis*, *Forsythia Fortunei*, *Cerasus Sieboldi*, *Diervilla*, and *Deutzia*, being included. There were also some good Violets from M. MILLER.

M. LECOINTE staged a group of evergreen shrubs; M. VICTOR DELAVIER, of Paris, cut Carnations; the firm of MM. VILMORIN-ANDRIEUX ET CIE had (on a staircase) two clumps of Carnations surrounded by *Orocrops*; L'ECOLE NATIONALE DES SOUS-SOLIS, of Paris, sent a group of Cinerarias with large and fine flowers; M. CARNET and M. LECOINTE showed fruit-trees.

On the first floor the MM. VILMORIN-ANDRIEUX ET CIE filled two large rooms, showing masses of Cinerarias, Tulips, Hyacinths, Carnations, *Cyclamen papilio*, &c.; and interesting collections of cereals and vegetables, including some fine Beetroot, and a series of various seeds germinating in small seed-growers.

There were, on another side, some handsome preserved Grapes from M. ANATOLE CORDONNIER, M. SADRON, M. CHEILLLOT of Thonery, &c., and specimens of *Asparagus* cultivation from M. COMPOINT. The fine bunches of Gros Colman from M. CORDONNIER surprised many visitors.

Greenhouse plants (Palms excepted) were few, and Orchids not represented. *Amaryllis* were well shown by M. FÉRAR, of Paris.

WOOD GREEN AND DISTRICT HORTICULTURAL.

MARCH 12.—An interesting lecture was delivered by Mr. AMOS PERRY, JUN., of the Hardy Plant Farm, Winchmore Hill, on the evening of the above date, at the Masonic Hall, Wood Green, before the members of the above Society, on "Bulbous and Onocycylus Iris."

After giving a somewhat full account of their geographical distribution, some historical facts concerning the flower were alluded to. Louis VII. of France adopted an Iris flower as his emblem during the Crusades, and at the consecration of his son an Iris was added to the Arms of France. After the battle of Cressy it was added to those of England, and so remained until its union with Ireland, when the Shamrock took its place. The various forms of bulbous Iris were then dealt with, selecting the prettiest adapted for cultivation in this country; these were fully described, with the mode of treatment, and many interesting matters mentioned in connection with their discovery. The *Onocycylus* Iris, a marvellous group, followed, and their cultivation was fully treated; and in concluding, the lecturer made a promise that on some future occasion he would describe other groups fully.

The usual monthly exhibition was held on the same evening, and was very successful, a great number of specimens of cultural skill being exhibited. The following members were awarded Certificates of Merit:—Mrs. E. LE RICHE, for a spray of Orchid blooms; Mr. E. LE RICHE, for an *Araucaria*; Mr. AMOS PERRY, JUN., for a collection of spring-flowering plants; Mr. W. E. PHILLIPS, for six pots of Daffodils; Mr. W. W. ROWLEY, and F. H. HAYMES, for *Azalea indica*; Mr. W. TILTON, for six Hyacinths; and Mr. R. CORE GARDNER, for a magnificent hanging basket (*Asparagus Sprengeri*), and for Daffodils.

READING & DISTRICT GARDENERS.

The last meeting was attended by a very large number of members. The subject for the evening was "Peach and Nectarine Culture, New and Old Methods Contrasted," which was introduced by Mr. W. Igglinden, of Frome, the following being a few of the points raised:—"Styles of Houses": Lean-to, three-quarter span, and span-roofed. Advantages and disadvantages in each. Preference given to rather high span-roofed houses with either single or double cross-trusses, planting trees back to back in the latter instance. "Borders": Where natural conditions are unfavourable, the soil must be excavated, the site drained, and newly-made borders are necessary, but market-growers have the advantage in this respect, in that they select positions that only require trenching, and slight additions made to the ordinary soil. "Trees": Maidens are better than trained trees. Maidens

are the quickest to attain to a heavily productive state, and develop into the finest as well as most lasting trees. The lecturer mentioned having planted a number of maidens under glass in March, 1899. Fifteen months later each were being cleared of from two dozen to four dozen first-sized fruit. An interesting discussion followed; the members pointing out that there was a great difference in the position of the market-gardener and private grower, and, therefore, the culture must be different in the two cases.

MEETING OF THE GHENT CHAMBRE SYNDICALE.

At the recent meeting of the Ghent Chambre Syndicale des Horticulteurs Belges et Société Royale d'Agriculture et de Botanique, the following Certificates of Merit were awarded: For *Cypripedium Spierianum* × *villosum aureum*, and for *C. callosum* × *superbiens* var. *Demidoff*, both from M. L. DRAPS; for *C. Rosa Bonheur* (*à l'unanimité*), C. Duvivierianum (*à l'unanimité*), C. "Mémoire d'Edouard Pynaert," C. *coloris nova*, and for *Odontoglossum "Surprise"* (*par acclamation*), all these from M. L. DE SMET-DUVIVIER. Similar recognition was allotted for *Lelia aniceps* *Hilliana* var., and *Odontoglossum crispum* var., both from the Société anonyme l'Horticole "La Lys," of Deynze; also for *Cypripedium Lecaum villosum* Madame Joubert, from M. STEPMAN, of Brussels; *Odontoglossum Adriane*, from MM. VENDONCK; *Cattleya Trianae* *Lindenii*, from le Marquis DE WAVRIN; who also showed twenty-two other varieties of C. Trianae, many of which received the award *à l'unanimité*. The same exhibitor was also successful with *Odontoglossum Cervantesii* *iliciana*, *Lelia Jongheana*, *Epidendrum Armstrongianum* (the two last *à l'unanimité*), another example of the last-named plant (*par acclamation*), and *Zygopetalum Perreondii*.

Certificates for cultivation and flowering were accorded to le Marquis DE WAVRIN for *Phalenopsis bornensis*, and for *Dendrobium speciosum* (*par acclamation* and *avec félicitations du Jury*); Certificate as a variety to the same exhibitor for *P. bornensis*; and Honourable Mention for *Odontoglossum* × *Doctor Struelens*, from M. L. P. DE LANGHE-VERVAENE.

A Certificate of Merit was awarded to M. FIRMIN DE SMET (*par acclamation*), for Cinerarias; for Cultivation and Flowering to M. E. BEDINGHAUS, for *Barosma floribunda*; and Honourable Mention for *Epazis picturata*, from M. E. BEDINGHAUS; *Clivia miniata* *perecta*, from M. CH. GAZELLE; and for *Hydrangea hortensis* *otaksa compacta*, from M. E. LOSSY.

DEVON AND EXETER GARDENERS.

MR. T. SLADE, the gardener at Poltimore Park, presided over a recent meeting of the Association, when Mr. J. MAYNE, gr. at Bicton, read a paper upon "Methods of Propagation."

Propagation from seed, said Mr. Mayne, had many advantages. It was easily carried out, and plants so raised were, as a rule, healthier. But certain plants could not always be depended upon to reproduce themselves from seed. Though in some cases it might be advisable to sow seeds as soon as they were ripe, the spring months were generally the most favourable. In very dry weather, when watering must be resorted to, it is better to soak the drills before sowing than after the seed is sown. With such hard-cased seeds as *Cannas*, *Camellias*, &c., it is necessary to soak the seeds for about 12 or 18 hours in tepid water. When sowing in pans or in pots, shading should be applied to accelerate germination; and in sowing the seeds of Melon and Cucumber, the soil should be moistened throughout previously, as much water applied after sowing, and before the seed has germinated, often leads to failure. A bottom-heat of 70° to 80° greatly favours germination in that class of seeds. Care should be taken not to bury seeds deeply, and such as *Begonia*, *Calceolaria*, and *Gloxinia* should be barely covered. The finer and more level the surface of the soil on which seeds are sown, the better.

Propagation by division is best done in the autumn, or in the spring, just as growth is beginning for another year.

In taking runners for propagation from such plants as Strawberries or Violets, it must be remembered that the rooting sucker nearest to the parent plant is the stronger.

Layering by the "tongueing" process was described; slitting a branch, inserting a small bit of wood to keep it open, and pegging it down until it had sent out roots, and was strong enough to be weaned from its parent plant.

In cases of *Dracaenas*, *Codiaeums*, *Aralias*, and the like, the system of "ringing" was said to answer very well—that is, by cutting the bark for about an inch or so all round the stem, and placing soil over it, or tying damp moss round it until roots were produced.

In propagating from the leaf only, a good, healthy leaf should be chosen, neither too young nor too old, the petiole or leaf-stalk taken off, and the lamina, or leaf-blade, inserted in pure sand, cocoa-nut fibre, or soil in pots or pans, kept fairly moist, but not too close. This is best done in early spring, and is a ready way of propagating *Begonias*, *Gloxinias*, and such-like plants.

Cuttings may be taken at almost any time, the best shoots for the purpose being those of average strength and age. Such plants as *Euphorbias*, *Dipladenias*, *Dracaenas*, &c., require considerable care, or the cuttings will not make roots.

Grafting was explained in great detail by Mr. Mayne, and the merits of whip or tongue grafting, saddle, cleft, and crown grafting discussed. The budding of *Roses* and fruit-trees was likewise referred to.

The Chairman (Mr. Slade) put on the table a fine collection of *Hippeastrum* blooms, some of the flowers being 7 inches across.

Obituary.

THE LATE DR. SUTHERLAND.—We regret to learn from the *Natal Mercury*, from which many of the following particulars are gleaned, that this active and esteemed man died on November 30, 1900, from pneumonia, at the age of seventy-nine years, at his residence in Durban, Natal.

To those who use the *Flora Capensis*, the name of Dr. Sutherland will be familiar as one who helped materially in the building up of our knowledge of the flora of the eastern part of South Africa, and in the minds of gardeners and botanists his name will be perpetuated in *Greyia Sutherlandii*, whilst *Sutherlandia frutescens*, although not named in his honour, yet being a South African plant, will very naturally be associated with his memory.

Dr. Peter Cormack Sutherland, F.R.G.S., was born in 1822, at Latheron, in Caithness, Scotland. His parents were in poor circumstances, and when he was eight years of age they emigrated to Nova Scotia, but after a few years' residence there, returned to their native village in Scotland. It is not improbable that the fact of his having crossed the Atlantic twice at this early period of his life, may have imbued him with that restless spirit and love of travel which characterised the first half of his career. At school the lad Peter proved himself an apt scholar of no mean ability, and when he had arrived at the age of twenty, he became a student at King's College, Aberdeen, where he graduated in his twenty-fifth year, and received the licence of the Royal College of Surgeons, Edinburgh. It was during this time, whilst still a student, that his name first began to be known among men of science, for it was at this period that he embarked upon his first scientific mission; this was to the West Coast of Africa, to report upon guano, which was then coming into use as a manure. Following this, between 1845 and 1847, he made two voyages in whalers to the Arctic Regions, where, according to the *Natal Mercury*, he was one of the last to see the ill-fated Franklin Expedition leaving Balin's Bay in the futile search of the North-west Passage. From 1847 to 1850 he practised as a medical man in Tyrie, New Pittsburg, and Aberdeen, but his love of travel did not permit him to be content with this mode of life for long, for in 1850 he offered himself as a member of the expedition which in 1850-51, under Captain Penny, went in search of Sir John Franklin and his missing crews. Of this voyage Dr. Sutherland published a journal in 1852, in which same year, learning that another Arctic expedition under Captain Inglefield was about to start on a fresh search for Sir John Franklin, he again offered his services as surgeon to the expedition, which started on July 5, 1852. During these voyages, besides attending to his official duties, he made considerable zoological and botanical collections, and studied the geology of the regions he visited. On his return from the second expedition, the scientific results of his labours were embodied in two appendices he wrote to Inglefield's *Summer Search for Sir John Franklin*. At this period he evinced a desire to enter the Government service, but on account of his age an appointment in that direction was denied to him; but, animated by a desire to push himself forward in life, and by his innate spirit of adventure, he sought for occupation abroad, and in the autumn of 1853 he went to the Colony of Natal. Concerning his journey thither, he published in the *Journal of the Geographical Society* for 1855, p. 256, a short article entitled "Remarks on a series of three-hourly Meteorological and other observations, made during a passage from London to Algoa Bay, from July to October, 1853." This paper admirably shows the capacity Dr. Sutherland had for research work, his energy and powers of observation, and shows how he utilised every opportunity that presented itself in scientific investigation. About six or seven months after his arrival at Durban, he was appointed Government Geologist to the Colony of Natal. In this capacity his sterling merits were soon recognised, and when, in 1855, the office of Surveyor-General became vacant, Dr. Sutherland was promoted to that important post, which he held until 1887, when he retired on a well-earned pension. During his life in Natal, he filled many public offices. He also had the honour of initiating into the ways and customs of South African life the now famous the Right Hon. C. J. Rhodes, who, in 1871, when a youth, was placed by his father in the charge of Dr. Sutherland, with whom he resided for several months before entering upon his great mission in life. Dr. Sutherland always took an interest in botany, and during the first half of his career in South Africa, as the pages of the *Flora Capensis* amply testify, he contributed to the riches of Kew a very considerable number of plants from Natal, Pondoland, and the Transvaal. From the *Natal Mercury* we gather that Dr. Sutherland was charitable and undemonstrative, and held in high esteem by his fellow-townsmen. "He never failed to do good when it lay in his power, and was a delightful conversationalist, full of interesting anecdotes and reminiscences. In all his public and private relations his career was marked by a high sense of honour and intense earnestness. As a speaker he was fluent and vigorous, and impressed his hearers with a sense of deep conviction." His name will be geographically perpetuated in Mount Sutherland, a peak of the Drakensberg Range at the point where Natal, Griqualand East, and Basutoland join each other. N. E. Brown.

SIR EDWIN SAUNDERS, F.R.C.S.—This venerable gentleman, the President of the National Chrysanthemum Society, died at his residence, Fairlawn, Wimbledon Common, on the 15th inst., at the age of eighty-seven. Sir Edwin took great

interest in the Chrysanthemum and the National Chrysanthemum Society. His gardener, Mr. A. Newell, grew the plants with remarkable success, and was a successful exhibitor at the exhibitions of the Society at the Royal Aquarium and also at local Shows. The late President had been a member of the Society for a considerable time, and on the resignation of Lord Brooke in 1891, was elected to the Presidential chair. Of late years, increasing infirmities consequent upon his age, prevented him from attending the exhibitions of the Society so often as he desired; but he gave a generous support to the Society, and the valuable President's prize has been a feature in the schedule of prizes offered at the November show for years past. Sir Edwin was a warm supporter of the Wimbledon Horticultural Society, of which he was a Vice-President; and both Lady Saunders and himself gave special prizes at Wimbledon and Roehampton. As far back as 1853 the late President became a Fellow of the Royal Botanic Society, and for twenty-five years was a member of its Council. His charming garden at Fairlawn was laid out by the late Mr. Marnock, but some of the leading features were of Sir Edwin's own suggestion. He had a passionate love for flowers, and took pride in seeing them well cultivated. Lady Saunders survives him, but he leaves no family. Sir Edwin was surgeon-dentist to her late Majesty Queen Victoria for many years. He was buried in Putney Vale cemetery on the 20th inst.

BOOK NOTICE.

ANNUAIRE BELGE DE L'HORTICULTURE.

M. LOUIS DE VRIESE, 15, Coupure, Ghent, has published a very useful year-book, containing details concerning the Ministry of Agriculture, the several schools of horticulture and agriculture, the various societies, journals, legal enactments relating to horticulture, fiscal regulations, and other matters concerning horticulture in general. Then follows a complete directory of nurserymen and traders in the various branches of industry connected with gardening. For those who have business relations with Belgium the list will be indispensable, and it will, no doubt, be improved each succeeding year. At present the arrangement is rather confusing, and one has to look in several places to find out, let us say, the nursery establishments of Ghent. This might be obviated by an alphabetical index of names, which we hope may be given in a subsequent issue. The insertion of advertisements in the text strikes us as objectionable—they should be placed apart, where every reader would know where to look for them.

CULTURE OF PALMS.

THESE all important and indispensable plants should now be examined in regard to soil drainage. Palms for the decoration of the dinner-table and of apartments should be of moderate or small sizes, and necessarily the pots should be as small as is consistent with the plants being in a presentable condition. When the plants are grown in very small pots, manurial aids should be frequently afforded, and one of these good to use is clear soot-water. Sulphate of iron in powder, at the rate of a small teaspoonful to a 10-inch pot, and washed in with water, gives a healthy colour to the leaves. When plants have been forced upwards by strong roots, as is often the case with *Latania borbonica*, repotting becomes a necessity. The new pots should be sufficiently deep to allow the surface of the ball of the plant to come an inch or more below the rims of the pots. Mutilation of the roots is not recommended as a means of attaining this object.

The kind of compost suitable for Palms is good turfy loam $\frac{3}{4}$, peat $\frac{1}{4}$, with the addition of a quart of steamed bone-meal to a wheelbarrowful of the soil, as well as some sand and charcoal. After potting, place the plants in a house having a

temperature of 65° to 70° at night, and 75° to 80° by day, and 5° to 10° higher than this by sun-bath. Syringe them twice or thrice a day whilst growing, and keep the air humid. Shading should be afforded whenever the sunshine is intense. When re-established, gradually induce them to cooler conditions. Palms, when the leaves are mature, will endure the dry air of a living room better than any other kinds of plants. *Kentia* are among the more useful species, and the variety *Posteriora* has a more pleasing habit than *K. Belmoreana*.

Other species of Palms are *Areca lutescens*, *Chamærops humilis*, *Corypha australis*, *Euterpe edulis*, *Latania borbonica*, *Phoenix reclinata*, and *Thrinax elegans*. Of species eminently fitted for use in dinner-table decorations, *Cocos Weddelliana* and *Geonoma gracilis* are among the best. Palms are now obtainable at such reasonable prices if bought by the dozen, that scarcely any gardener need be lacking their possession. D. Roberts.



METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period March 10 to March 16, 1901. Height above sea-level 24 feet.

1901.		DIRECTION OF WIND.		TEMPERATURE OF THE AIR.				TEMPERATURE OF THE SOIL AT 9 A.M.				RAINFALL.	LOWEST TEMPERATURE ON GRADE.
MARCH 10 TO MARCH 16.				At 9 A.M.		Day.	Night.	At 1-foot deep.	At 2-foot deep.	At 4-foot deep.			
				Dry Bulb.	Wet Bulb.						Highest.			Lowest.
SUN. 10	N.N.E.	31.0	33.3	42.9	30.0	...	41.2	43.0	44.2	23.1			
MON. 11	N.N.E.	32.2	30.6	45.1	30.0	...	40.6	42.8	44.2	22.8			
TUES. 12	N.N.E.	40.9	39.0	53.3	31.0	...	40.3	42.5	44.2	20.2			
WED. 13	N.N.E.	37.5	35.3	42.1	31.5	...	41.6	42.9	44.2	22.4			
THU. 14	E.N.E.	40.3	38.8	47.3	36.7	...	41.0	42.7	44.2	23.5			
FRI. 15	E.	39.9	37.0	42.1	37.7	0.00	41.5	42.8	44.2	23.8			
SAT. 16	N.E.	38.3	37.6	45.1	36.8	...	41.5	42.8	44.2	23.8			
MEANS...	...	37.6	36.3	43.5	33.5	0.00	41.0	42.8	44.2	23.9			

Remarks.—A week of dull, sunless weather, with very cold winds from the north-east. A small quantity of rain fell on the night of March 15.

GENERAL OBSERVATIONS.

The following summary record of the weather throughout the British Islands, for the week ending March 16, is furnished from the Meteorological Office:—

"The weather during this period was very cloudy or dull over the country generally, with a keen, cold air over England, but warmer conditions over Ireland and Scotland. Slight falls of rain were experienced from time to time, first in the west, then in the south and east, but the week as a whole, was dry.

"The temperature exceeded the mean over Ireland and Scotland, as well as in England, N.W., and just equaled it in the Midland Counties and England, S.W.; in the east, south, and Channel Islands it was 1° or 2° below the normal. The highest of the maxima were recorded either at the commencement or about the middle of the week, and ranged from 61° in Scotland N. and E., and 59° in the Midland Counties to 58° in the Channel Islands. During the greater part of the week the daily maxima over England were considerably less than 60°, and in some cases very little more than 52°. The lowest of the minima were recorded on the 10th and 11th over England, but irregular dates in Ireland and Scotland; they ranged from 24° in England, E., 27° in England S.W., to 22° or less in most other districts, and to 25° in the Channel Islands.

"The rainfall was less than the mean in all districts; the falls were very slight generally, and in the Midland Counties and England, S.W., were almost negligible.

"The height of the wind was very variable in all districts, excepting Scotland, N. The pressure at the possible variation ranged from 29.7 in the Channel Islands to 29.9 in the Midland Counties, from Ireland, S., and 29.8 in Ireland, N.

THE WEATHER IN WEST HERTS.

A cold, dry, and sunless week. There were no exceptionally cold days or nights, and the days were, as a rule, comparatively colder than the nights. On the coldest night the exposed thermometer showed 5° of frost. At 1 foot deep the ground is at the present time about 1 colder than is seasonable, but at 2 feet deep it is, if anything, rather warm—owing to the influence of the warmer weather in the early part of the month. No rain worth mentioning has now fallen for nearly a fortnight. On the 19th snow fell throughout the greater part of the day, the flakes melting as they reached the ground. No measurable quantity of rain-water has come through the percolation gauge covered with short grass for several days, and less than half a gallon through the bare-soil gauge. On one day the sun shone for five hours, but during the rest of the week only two and a half hours of clear sunshine was altogether recorded. During the last twelve days the direction of the wind has been for 213 hours from some point between north and east, but these north-easterly winds have been mostly of very moderate strength. *Saxifraga Boydii* alba came first into flower on the 15th, or five days later than last year. *E. M., Berkhamstead, March 19, 1901.*

GARDENING APPOINTMENTS.

MR. THOS. SINGLETON, for eight and a half years Head Gardener at Carraghmore, Portlao, county Waterford, as Head Gardener to G. H. MORRELL, Esq., M.P., Headington Hill Hall, Oxford, in succession to Mr. Hovell.

MR. CHARLES HEWITT, late Gardener to — SHANNON, Esq., Tudor Hill, Sutton Coldfield, has been engaged by Wm. C. G. LUDFORD, Esq., to take charge of the garden and Cactus-houses at Fern Lea, Four Oaks, Sutton Coldfield.

MR. JOHN WAUGH, for the last four years Head Gardener at The Mount, Hestle, Hull, as Head Gardener to OSWALD SANDERSON, Esq., at the same place.

MR. H. PLUMERIDGE, formerly Gardener at Gayton House, Northampton, as Head Gardener to C. CRAIG, Esq., Flore House, Weedon, Northamptonshire.

CATALOGUES RECEIVED.

BARR & SONS, King Street, Covent Garden, London—Hardy Perennial Plants, Alpines, Aquatics, &c.

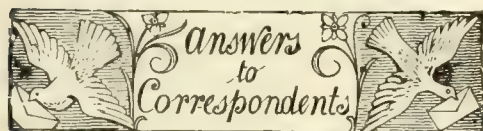
FOREIGN.

W. C. MOUNTAIN, Constantinople.—*Galanthus*, *Chionodoxa*, *Narcissus*, &c.

E. H. KRELAKE & SONS, Bloembhof Nurseries, Haarlem, Holland.—*Begonias*, *Cannas*, *Dahlias*, *Gladioli*, *Gloxinias*, *Lilies*, *Herbaceous Perennials*, &c.

SOUPERT & NOTTING, Luxembourg—Roses.

FREDERIC ADOLPH HAAGE, Jun., Erfurt, Germany.—*Cacti* and other succulents and seeds of same. (Agent for United Kingdom, H. N. ELLISON, 3, Bull Street, West Bromwich, Staffordshire.)



AGAPANTHUS: S. G. The white grubs are apparently those of a *Julus*; they feed on decaying matter, but do not themselves cause the decay.

AMERICAN BLIGHT: *Constant Reader*. It is almost too late in the year for taking thorough measures to eradicate the pest, the buds being on the move. You might safely, however, scrub the branches with Gishurst compound soap, at the rate of 3 oz. to the gallon of water (hot), taking pains to cleanse crevices and angles well, first scraping off every vestige of rough or loose bark. Having allowed the trees to get dry, coat them with a thickish wash of quicklime, clay, soot, and cow-dung; this will smother all insect-life. Then bare the upper roots, and saturate the earth with soap-suds, which will have the effect of killing the aphid infesting them. In mid-winter, whale-oil or petroleum emulsion may be applied to the infested trees, and the smothering mixture used as before, baring the roots and repeating the soap-suds drenching. If you can put soil from another part of the garden over the roots, it will be better than returning the old to its place.

ARUM BLOOM: C. F. Your specimen illustrates a condition by no means uncommon in *Richardias*, and one that has been very frequently described in these columns. A "twin" or double-spated *Arum* was figured in the *Gardeners' Chronicle*, February 23, 1878, p. 241.

FIG LEAVES: O. L. and W. H. The leaves are attacked by the fungus *Cercospora Bolleana*. Good would be likely to result from spraying the leaves at an early stage with the Bordeaux Mixture. An attacked leaf was illustrated and the pest described in *Gardeners' Chronicle*, July 7, 1900, p. 5.

FUNGUS: W. H. Harris. Only a condition of mycelium or spawn, and it is impossible to say what its ultimate form might be. M. C. C.

LÆLIA COWANI: *Debnam*. As a garden plant, this is a new introduction, although botanically it may be regarded as a variety of *Lælia flava*, from which it differs mainly in having orange-coloured instead of light yellow flowers. This view is strengthened by the fact that occasionally the old form of *Lælia flava* has produced an orange-coloured variety, one of which, from Lord Rothschild's gardens, was noted as *Lælia flava aurantiaca* in the *Gardeners' Chronicle*. The plant known as *Lælia Cowani* seems to be of more robust habit than the old *Lælia flava*.

MUSHROOMS: M. Savory. The subject is too lengthy for giving in this column, and we would advise you to purchase Mr. John Wright's *Mushrooms for the Million*, sold at the office of the *Journal of Horticulture*, 12, Mitre Court Chambers, Fleet Street, E.C.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—J. E. H. *Ophiopogon Jaburan variegatum*.—R. 1, *Dendrobium nobile*; 2, *Phaius tuberculatus*; 3, *Cœlogyne Lemoniana*; 4, *C. flaccida*.—Mendeli. *Dendrobium chrysotoxum*.—Mr. Worsley. *Cattleya Trianae*, a poor variety, not C. Mendeli. J. H. L. *Cattleya Trianae*, imperfectly formed. *Ayrshire*. 1, *Acer polymorphum atropurpureum*; 2, *Adiantum macrophyllum*; 3, *A. tenerum*; 4, *Dracæna pulcherrima*; 5, *D. marginata*.—Rienzi. 1, *Nephrodium molle*; 2, *Polypodium phymatodes*; 3, *Adiantum tenerum*; 4, a form of *Adiantum capillus-veneris*; 5, *Selaginella Mertensii*; 6, send when in flower; 7, *Petasites fragrans*.—J. C. 1, *Tetratheca verticillata*; 2, *Narcissus minor*.—F. E. H. 1, *Picea nigra*; 2, *Golden Hedgehog Holly* (*I. ferox aurea*); 3, *Pinus excelsa*; 4, *Juniperus communis*; 5, one of the Cedars, probably the *Deodar*; we cannot tell from the leaves only; 6, probably *Pinus pinaster*; we cannot be sure without seeing the cone.—R. K. Hope. 1 and 3, *Odontoglossum crispum*; 2, *Odontoglossum Andersonianum*; 4 and 6, varieties of *Dendrobium Ainsworthii*; 5, *Dendrobium nobile*. All of ordinary quality.—R. E. 1, *Dendrobium chrysotoxum*; 2, *Dendrobium Pierardi*; 3, *Dendrobium tortile*.—C. D. F. *Reineckia carnea variegata*.—R. E., Bristol. Two *Cattleya Trianae*. The *Odontoglossum* flower mentioned was not found.

PARADISE APPLE: S. B. This botanically is *Pyrus præcox*, a Russian species, which has the peculiarity of putting forth roots near the surface of the ground, instead of going down deeply, as is the case with the common Crab, and its varieties. There are two recognised varieties of Paradise, one having a broader and rounder leaf than the other, and it is this variety that nurserymen prefer. In nursery parlance, the Paradise Apple is a "dwarfing stock," that is it is employed for forming short stocks or stems for bush and espalier Apples. Its habit of rooting near the ground level makes it a useful stock for trees that are to be planted on naturally hungry soils, and shallow sandy-loams overlying gravel or sand. It is equally adapted as a stock for wet soils, as by triennial lifting the roots of bush trees, cordons and espaliers can be kept near to, or on the surface (mound planting). You cannot plant this stock in the spring months and expect grafts put on it at once to do any good—they would probably succumb to wind and sun; but if the young stocks left uncut, and buds of Apples of fine varieties are inserted at a point about 1 foot from the ground, in August and September these will take successfully. The Stock is raised from seeds mostly by persons specially engaged in the business. We would advise you to obtain your stocks from a trustworthy firm in this country, and have nothing to do with foreign stocks, which are often much mixed. Trees worked on Paradise are not long lived—20 to 25 years.

ROOTS: B. G. Stanly. Not anbury, but excrescences formed by the grubs of the Cabbage-weevil. The advice given last week still holds good.

SHAMROCK: W. H. You need not be particular. Any three-leaved, Clover-like plant will do. What you send is *Trifolium minus*, now generally adopted as the Shamrock.

SHRUBS IN A NURSERY NOT HELD UNDER LEASE: C. S. B. The tenant could not compel the landlord to accept the shrubs in lieu of rent due to end of tenancy, whether valued or not. That would be a matter as between landlord and tenant to be arranged, if possible, amicably. You cannot compel a man to accept an article he may not want in lieu of rent unless there is some previous definite agreement.

SOUTH AFRICAN BULBOUS PLANTS: C. F. C. We know of no work that deals specially with the cultivation of South African bulbs; but if you have a clear idea of bulb culture in general, and take into consideration the fact that the climate of the country is considerably warmer than that of Southern England, and that there is a wet and a dry season, and that the vegetation is as a rule not capable of withstanding the rigours of our climate, it should not be difficult for you to cultivate bulbs from any part of South Africa. Those from the warmer parts, that is from lower Natal, Swaziland, Rhodesia, and Northern Transvaal, would require warm greenhouse treatment, and even slight bottom heat when making their growth, and to be kept under glass all the year round. Some bulbs, *Watsonias* for example, will succeed in warm borders close to buildings out-of-doors; others are amenable to cultivation in cold frames, or in the open air during the summer. A manual published by L. Upcott Gill, 170, Strand, W.C., entitled *Popular Bulb Culture*, would afford information on some South African species.

TOMATOS: G. Hutt. Your plants are attacked by a fungus which produces a condition known as the "Sleepy" disease. The fungus first attacks the roots, and grows up within the plant as an internal parasite. Spraying with insecticides is useless. Destroy the plants as soon as they show evidence of disease, and mix plenty of lime with the soil when potting the plants, or planting them into borders. The disease was described and illustrated in the *Gardeners' Chronicle*, June 8, 1895, pp. 707, 708.—J. W. Send further specimens when the affection has become more pronounced. Whatever the cause may be, the leaves at present afford no positive indication.

WORMS IN TURF: W. M. The creatures may be brought to the surface by applying clear lime-water to the turf, and must then be collected. Turf without worms is likely to be waterlogged, if it be heavy soil, and not drained artificially, or is not on an acclivity. Worms act the part of manure, or rather soil-distributors, by bringing the subsoil to the surface and leaving it there in the shape of "casts."

COMMUNICATIONS RECEIVED.—J. B.—G. F.—Stanton (we cannot undertake to name varieties of Potatoes).—F. E. T.—E. H.—Hudson—W. S. B.—P. W.—Sutton & Sons—W. M.—B. de B.—J. J. W.—H. M.—W. J. T.—D. R. W.—A. D.—J. F. McL.—Dr. H. R.—G. G.—R. I. L.—with photographs—H. H. D'O.—A. J. K.—W. B. L.—C. E. W.—D. T. F.—J. H.—S. B. D.—M. Guignan, Paris—Sweden.

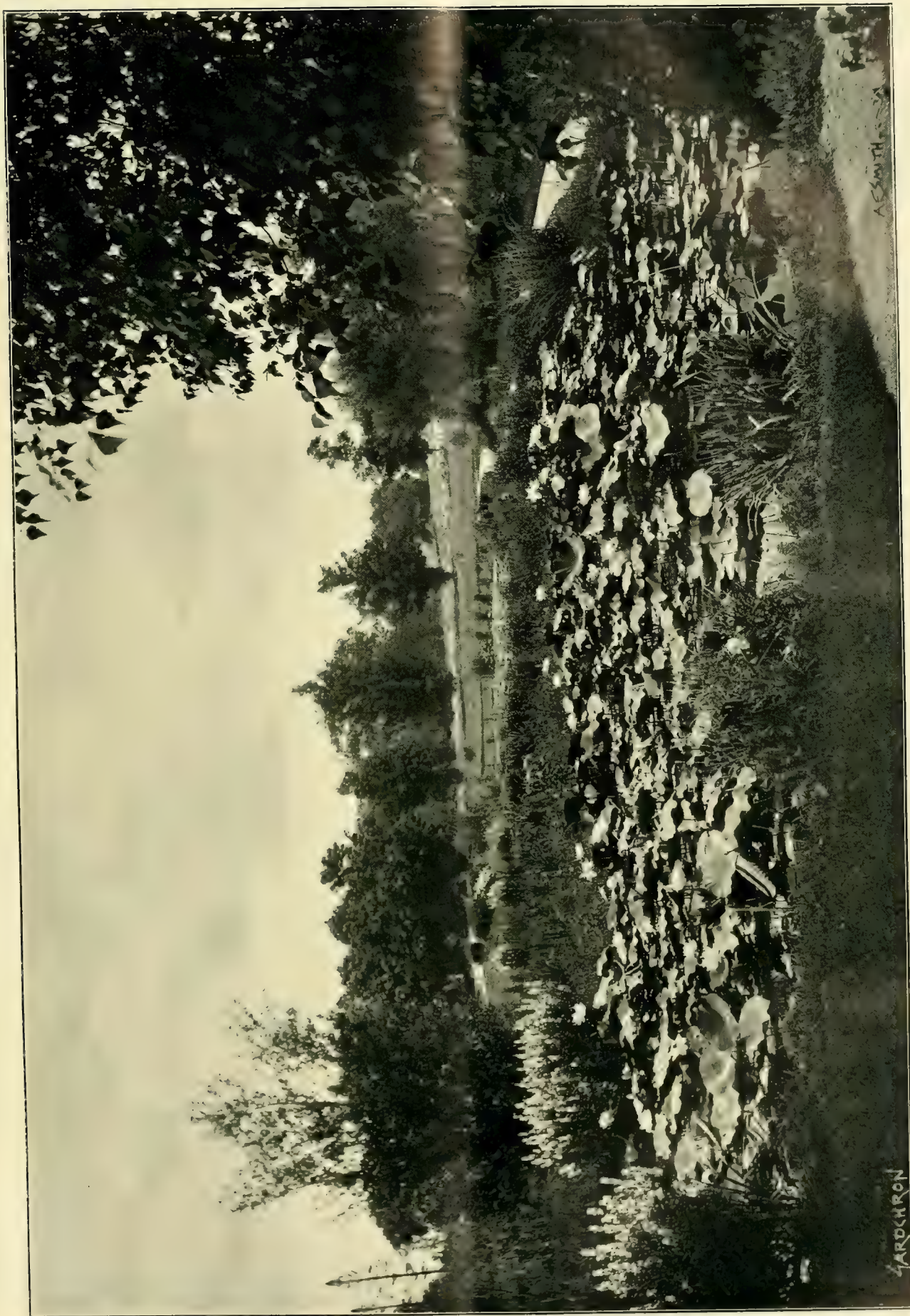
Continued Increase in the Circulation of the "GARDENERS' CHRONICLE."

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

TREBLED.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, AND ALL CLASSES OF GARDENERS AND GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.

(For Markets, see p. x.)



THE LOTUS-POND IN THE GARDEN OF OAKES AMES, ESQ., BOSTON, U.S.A.



THE

Gardeners' Chronicle

No. 744.—SATURDAY, MAR. 30, 1901.

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FROST ON THE RIVIERA.

(Concluded from p. 182.)

CITRUS, &c.—Next let me state, that no species of Citrus has suffered the least here, but if, as stated, the Orange cultures of south Italy have suffered severely, it must have been colder there than it was here. The Orange, Mandarin, and Lemon trees look as well as ever, and are covered with luscious ripe fruit. Adverting to fruit-trees, let me state that none of the exotic fruit-plants which I named in my last article, have suffered, except the Bananas, and even one cluster of fruit looks well enough in a sheltered corner near a wall, though the plants have mostly lost their leaves.

PLANTS THAT WERE INJURED.

The plants which have principally suffered are those with soft leaves like the different Musas, of which the much-talked-of *M. basjo* has suffered just as much as the others, though, as well known, it will exist in the open, and give a yearly crop of new shoots even in northern France. Of course, this plant does not die down here to the ground, but it has lost its leaves. The *Wigandias*, *Podochænum paniculatum* (Ferdinanda), some *Eupatoriums* (*Hebeclinium*), *Montagnea bipinnatifida*, the grandest of *Marguerites* here, forming a small tree, covered with its large white flowers in mid-winter; *Astrapæa Wallichii*, and, to a less extent, the *Senecio Ghiesbreghtii*, *Solanum albidum*, robustum, *Warszewiczii*, *Cyphomandra betacea*, *Datura sanguinea*, *D. suaveolens*, and other

similar plants have suffered much, having lost not only their flowers and leaves, even the tops of the tender shoots being killed. These are all plants which require full sunshine for their perfect development, and consequently they were on the day after the frost exposed to its full force.

PLANTS THAT SUSTAINED LITTLE INJURY.

On the other hand, the different *Salvias* have hardly suffered at all, and the most showy of them all, *S. gesneriflora*, is in all its glory of bloom. Attached to a south wall, and sheltered a little by the sprays of different climbers, is an *Euphorbia pulcherrima* (Poinsettia), which has not suffered at all, and shows its brilliant bracts as well as ever. Also *Heliotropium peruvianum*, different *Bouvardias*, *Manettia bicolor*, *Bougainvillea glabra* var. *Sanderiana*, and other winter bloomers have continued flowering; and *Tacsonia mollissima* is covered with perfect flowers and fruits in all states of development. *Hexacentris coccinea* has suffered much where exposed to the sun, but not at all on a wall with a perfect northern exposure, where it is continuing in bloom. Let me here name the different evergreen *Asparagus*, as *A. plumosus* and its varieties, and *A. Sprengeri*, which are perfectly hardy; as also the beautiful *Semele androgyna*.

Plants with leathery leaves, as *Ficus*, *Araliaceæ*, and others, have not suffered much, except where they were in full growth, when the tender leaves were killed. A very vigorous *Ficus macrophylla* did not suffer, though exposed to the full sun. The *Ficus elastica* in positions where sheltered a little has not suffered. Now these plants, especially the *Araliaceæ*, among which are so many ornamental-leaved plants give just a tropical aspect to a garden. *Agaves* and *Aloes* have not suffered, with the exception of *Agave attenuata*, a most ornamental plant, quite distinct from other *Agaves*. Still, not even this soft-leaved species has suffered where it was sheltered a little. Most *Furcraeas* have suffered where they were not sheltered a little by other plants. I do not cultivate many species of *Cactus*, but those I have, have not suffered. The different arborescent *Opuntias* seemed perfectly hardy, and are the most important for picturesque effect.

THE RESISTING POWER OF BROMELIADS.

On the rockery, over which a small cascade falls, was to be seen a curious but fortunately rare sight here. A number of different moisture-loving plants, enjoying the continuous sprinkling by the water, grow on these rocks, and whenever the drops reached the plants they were covered by long icicles. Among these moisture-loving plants I have placed, for experiment, some tufts of a *Bilbergia Blireiana*, a hybrid; which, together with other *Bromeliads*, I owe to the courtesy of M. Ed. André, editor of the *Revue Horticole*. I know that these plants do not grow naturally in such places, but having found them to possess an extraordinary power of accommodation to all kinds of conditions, I thought that I would try their resistance to continual moisture, as I already knew their resistance to an almost continual absolute drought, even without the benefit of dew. I have tufts, resisting for nearly three years in a cave with scanty light, growing in a little soil in a box of zinc, and never watered except sometimes by chance, often after months of absolute drought. Now I find a new quality in these plants, namely an extraordinary power of resistance to cold under the worst conditions. Where even *Pteris cretica*

and *P. tremula* lost their leaves, two *Bilbergia* hybrids have hardly suffered at all. I always thought that *Aspidistra lurida* was the *ne plus ultra* of resistance to apartment-culture under trying conditions. Would not certain *Bromeliads* be even more resisting? they are certainly very ornamental even when not in flower. Most of them have, of course, suffered.

Tender plants, as *Monstera deliciosa* and *Epipremnum mirabile*, have lost their leaves, which formed a mass of ice; still, the trunks have not suffered, nor the leaves where they dipped into the pool beneath the cascade. Both plants otherwise succeed admirably here, attaching themselves to rocks like *Ivy* and other plants in positions where a little sheltered, have not suffered in the least. A few inches from the reach of the water-drippings, and not exposed to the first rays of the morning sun, plants as delicate as *Begonia Rex* hybrids, *Nephrolepis exaltata*, &c., have not suffered at all.

An ornamental piece of water was covered with ice of about 2 centimetres thick everywhere except underneath a bridge. This has not prevented *Aponogeton distachyum* from flowering continuously, as it does here the whole year. It has the rare quality in water-plants of flowering as well in the shade as in the full sun, and produces even then much larger leaves, as long as 50 centimetres. *Cyperus Papyrus* and *C. alternifolius* have suffered where hit by the sun; as also different *Hedychiums* and *Alpina nutans*, while in other places they are uninjured.

And now I shall finish this report with the remark that patience in trying plants again and again, even after repeated losses, is necessary before concluding definitely as to their powers of resistance. I see that some *Coffee* seedlings in pots under a little straw-shelter have resisted up to now, so that it still may be possible to make a cup of *Coffee* from plants grown in the open in France. Near by, I find seedlings of the *Melon-tree* (*Papaw*) apparently lost. This plant I have tried yearly all the time I have been here, but I could never make it pass safely through the winter. It seems to object to dry cold much less than to a low temperature accompanied by rain. This is common enough, but applies perhaps in a quite exceptional way to this plant, which looked all right for weeks after the severe cold, but when it rained a little some days ago it immediately became rotten from the bottom. Other *Caricas*, as *C. cundinamarcensis* and *C. quercifolia*, growing in the open ground, the last-named in fruit, have resisted, where *C. Papaya* under the same conditions has succumbed. *A. R. Proschowsky*, *Grottes St. Hélène*, *Chemin de Fabron*, *Nice*, *France*.

NEW OR NOTEWORTHY PLANTS.

CYPRIPEDIUM × TANTALUS (TONSUM ♀, MASTERSIANUM ♂).

A FLOWER and leaf of this singular hybrid between two remarkable but not showy species, are sent by Reginald Young, Esq., Sefton Park, Liverpool (gr., Mr. Poyntz), in whose collection it was raised. The leaf is pale green with dark green markings. The flower has the dorsal sepal greenish on the lower half, and creamy-white on the upper part. It bears many green lines radiating from the base, the central and some of the outer ones being tinged with purple; the lower sepals are small, greenish-white with green lines; the petals, which are almost horizontally extended, measure from tip to tip 4½ inches, each being ¾-inch wide, their colour greenish tinged with rose, and bearing some purple

spots along the centre, and margins which are ciliate; the large labellum is pale sap-green, tinged on the face with rose colour; staminode forming a curved projection on each side in front, greenish tinged with rose. *J. O'B.*

VALERIANA ARIZONICA.*

WE are indebted to Mr. Henkel of Darmstadt for the opportunity of calling attention to this plant, which he describes as a beautiful rock-plant, which thrives well at Darmstadt; and as it forms a dense carpet, no doubt it looks well in the mass, though the individual plants are not imposing. In general appearance (fig. 75) it much resembles our common *Valeriana dioica*. From a thick, creeping root-stock emerge rather thick, fleshy descending, simple roots. The upper part of the rhizome branches into numerous shoots, bearing tufts of glabrous leaves; the lowermost are ovate-acute, entire, about 1 cent. long, rather less in width, with a stalk of the same length. The upper or cauline leaves are about 4 cent. long, shortly stalked, deeply pinnatifid, the terminal lobe about 2 cent. long, a little less in breadth, the lateral lobes in two pairs, very much smaller; flowering stem 8 to 9 cent. high, with terminal cymose clusters of small tubular whitish or pink flowers, with a very short blunt spur at the base of the slender corolla tube. In some of the flowers the three stamens project beyond the tube, and the style is short; in others the style protrudes, and the stamens are abortive, so that the plant shows a tendency to be dioecious. *M. T. M.*

ORCHID NOTES AND GLEANINGS.

CYPRIPEDIUM × LEANDER VAR. MRS. E. G. UHLEIN.

THIS fine hybrid, obtained by crossing *C. × Leeannum giganteum* and *C. villosum aureum*, was first shown by its raisers, Messrs. F. Sander & Co., at the Royal Horticultural Society, January 12, 1897; the plant was then flowering for the first time. The chief feature that was remarked in the flower was the bright, glossy yellowish colour of the lip and petals. Now that it has matured, its extraordinary size, together with its fine colouring, render it a showy, desirable flower. A fine example is sent by the Rev. F. Paynter, Stoke Hill, Guildford (gr., Mr. Cook). The base of the upper sepal is of a greenish-yellow tint, the margin and upper half being pure white, a broad band of purple blotches running up the centre, and some shorter and narrower ones on each side. The petals and lip are yellow, with a slight green tinge, the petals having a purple band down the middle, the upper halves being also tinged, and obscurely crossed with brownish-purple.

THE PROPAGATION OF FINE FOLIAGE PLANTS.

(Continued from p. 168.)

ACALYPHAS.—Though by no means of equal value to the species already enumerated, *Acalyphas*, when highly coloured, are very useful. They may be propagated very readily from cuttings, and a stock, soon established. The plants should be grown rapidly in the stove, with full exposure to the sun until they are fit to be removed to 5-inch pots. They should be afforded soil of a light rich character and firm potting. If they be placed

upon a shelf near the glass and syringed frequently, they will soon assume a brilliant colour—the only valuable characteristic of these plants. *A. Macafeana*, *A. musaica*, and *A. marginata*, are the three species most generally grown.

Alocasia.—There are few plant stoves that do not contain a representative of this genus, and there are no more handsome plants than choice *Alocacias* when well grown. They delight in a moderately loose rooting medium, such as a compost of peat and fibrous loam, which should be broken into pieces ranging from the size of Walnuts to that of a hen's egg, and some charcoal and dried sphagnum-moss, which will need to be chopped. A little silver-sand should be thrown into the compost as the process of potting proceeds.

of *Alocacias*, it is essential they should be afforded a warm temperature, moist atmosphere, and comparative shade.

Pavetta.—Little known in private gardens. This is a charmingly handsome but little-known plant. It is more largely grown by the continental nurserymen than in this country. The leaves are beautifully marked, and are of a tough, leathery appearance. The plants require similar treatment to that afforded *Cordylines*. Water must not be spilled upon the foliage, or damping of the points will be sure to follow. The two kinds known to me are *P. borbonica* and *P. montana*.

Phyllanthus.—Possessing a shrubby habit, good constitution, and handsome appearance, this plant,



FIG. 75.—VALERIANA ARIZONICA.

Alocasias may be propagated by offsets, and this method is usually employed, but in cases of some varieties the stem may be cut into lengths of from 1½ inch to 3 inches, according to the thickness of each, and used for obtaining young stock. When the pieces of stem have made a few inches of growth, put them into small pots, and remove them to a propagating-case, where the atmosphere can be kept close. They will soon make roots.

Of the dwarf-growing varieties, none in my opinion is better than *A. Sanderiana*; the markings and perfect formation of the leaf are delightful. *A. Veitchi*, though seldom seen, is also a very choice variety. Special mention may also be made of *A. Thibautiana*, which is possessed of a vigorous habit; the leaves are beautifully marked, and for general purposes the plant is very valuable; while in *A. Lowi*, *A. intermedia*, *A. Chelsoni*, *A. metallica*, and the well known *A. zebrina*, we have names which are sufficiently well known to warrant their introduction to any collection. In the cultivation

with its softly toned markings, gives a natural aspect to the stove, and relieves the more glaring colour of many of its occupants. The chief beauty of the *Phyllanthus* is upon the reverse side of the leaves, and is seen to advantage when immersed in water, the silvery outer covering being like a coating of quicksilver. The plant may be easily propagated from cuttings. A compost of which sandy peat forms the main portion should be used for potting the plants, and should be made moderately firm. *P. nivosus* and *P. roseo-pictus* are the two varieties most generally seen.

Curculigo.—This plant seems to have lost favour with growers, in the south especially. It is rarely seen except as half-starved specimens, consequently its purchase by any but those who know the plant well is not an everyday occurrence. The plant naturally has a tendency to become frayed at the points of the leaves, and this detracts from its otherwise good appearance. This disfigurement may be guarded against by placing it in a position

* *Valeriana arizonica* (Gray).—"A span or two high from tufted creeping root-stocks, glabrous, no sarmentose branches; leaves somewhat succulent, radical ovate, 1 inch long, mostly entire and simple, some with one or two pairs of minute lobes on upper part of the rather long and margined petiole; cauline two pairs, subsessile, 3 to 5-parted; lobes oblong to lanceolate; cyme glomerate; corolla ½ inch long, tubular, with gradually expanding throat; stigma minutely 3-cleft. *Proc. Am. Acad.*, xix., 81. Arizona, in the mountains near Prescott; Palmer; Santa Catalina mountains, Lemmon. Fruit not seen."—*Asa Gray, Synoptical Flora of North America*, vol. i., part ii. (1884), p. 43.

where it is not likely to be rubbed, and where water from the syringe cannot by any chance come into contact with it. Similar soil to that advised above for *Phyllanthus* will suit this plant, and propagation may be effected by division. *C. recurvata*, the green-leaved type, is of a stronger habit and constitution than *C. r. variegata*, though the latter is decidedly more ornamental. *J. F. McLeod, Dover House Gardens, Roehampton.*



FIG. 76.—*ALOE LYNCHII*: A HYBRID BETWEEN *GASTERIA VERRUCOSA* AND *ALOE STRIATA*.

CONSTRUCTION OF TRELLISES IN FORCING-HOUSES.

KNOWING that at the present time forcing-houses are being erected in various parts of the country, and that many growers are exercised in their minds as to the best and cheapest mode of constructing a suitable trellis upon which to train Vines, Peaches, Figs, Melons, and Cucumber-plants, I am desirous, with the Editor's leave, to describe how a trellis, which has simplicity of construction, cheapness, and efficiency to recommend it, should be made. Taking a lean-to with front ventilating sashes as our first example: we take a piece of $1\frac{1}{2}$ inch gas-tubing corresponding in length with that of the rafter to the mullion and door-post, at say, 15 inches from the roof-glass with $\frac{1}{4}$ inch thick bolts,

tightening these up on the outside by means of nuts, one small iron plate being placed between each of these and the wood to prevent the nuts cutting into the latter when screwed home, as well as to afford additional strength and durability to the work when completed. This done, place two or three vertical bars of 1 in. by $\frac{1}{4}$ in. iron at equal distances from the end mullion and door-post, or principal sash or division bar, according to width

wire being passed twice round the bolt connecting both sides of the "raidisseur" and tubing—one raidisseur being provided for each wire. The individual wires should be left sufficiently long to allow of the ends being taken comfortably through the central eye and round the pulley provided in each "raidisseur" for the purpose of tightening, and be wound up with the key to the desired degree of tightness. This done, insert a series of small screw-eyes at 20 inches or 24 inches apart, as the case may be, in each rafter immediately above each line of wire, the screw-eyes in each successive rafter being placed anglewise to those in the preceding one, so that the weight of crop may be distributed equally over the whole of the trellis and roof of the house when the latter is connected with the individual wires by means of short lengths of wire of the same gauge with hooks formed at right angles at each end, these being closed in with a pair of pincers when attached to the screw-eyes and wires. A most efficient "hinge-trellis" is thus constructed, which, in many ways, is preferable to the usual stiffly-fixed ones.

In the case of a span-roofed house, I need hardly say that the trellis described above should be fixed under both roofs in the manner indicated, the topmost wire being fixed immediately under the ridge at the proper distance from the roof-glass, and the top ends of both sets of tubing should be flattened out a little, and then bolted through the central upright division-bar between lintel and ridge, the bolt being secured on the outside by a nut; a plate, $\frac{1}{4}$ inch by 1 inch, and sufficiently long to extend a couple of inches over the lintel and ridge, having been first placed over the bolt between the nut and woodwork. This plate, being provided with four counter-sunk screw-holes to admit of its being secured to ridge and lintel, will afford sufficient support to the tubing to resist the strain necessarily involved in tightening the top two or three wires. The whole trellis, framework, wires, &c., should receive three coats of good white-lead paint as soon as finished, or at least, before young growths are trained thereto. *H. W. Ward.*

ALOE LYNCHII ×.

FOR the opportunity of illustrating this curious hybrid we are indebted to Mr. Justus Corderoy. It was originally raised by Mr. Lynch, between *Gasteria verrucosa* and *Aloe striata*. A full description of the plant was given by Mr. Baker in our columns, February 26, 1881, p. 226. The characters are almost exactly intermediate between those of the two parents, both as regards foliage and inflorescence (fig. 76).

A RÉSUMÉ OF FERN PHENOMENA DISCOVERED IN THE NINETEENTH CENTURY.

AT the beginning of a new century it may not be out of place to glance at the results of research into the special branch of Fern biology, and to summarise the discoveries made in that connection to date, especially since practically the whole of our knowledge of the somewhat occult processes of reproduction, and especially of the abnormal modes in which this is sometimes effected, has been acquired during the century just expired.

When that century began, the true nature of the Fern-spore remained an absolute mystery, although as early as 1597 Gerarde recorded the observation of seedling Ferns near the parents. In 1648 Coesius observed the sporangia, or spore-cases; and in 1669 Cole detected the spores. In 1636 Ray noted the hygroscopic movements of the sporangia; in 1715 Morison raised young plants from spores; and in 1788 and 1789 Ehrhardt observed the prothallus, and Lindsay the germination of the spore. None of these observations, however, embraced the *modus operandi*, and it was not until 1827 that Kaulfuss observed the development of the prothallus, leaving it even then to Naegeli in 1844 to

THE FLAGSTAFF AT KEW.

THE illustration (fig. 77) has varied interest. It represents the fine spar of Douglas Fir (*Pseudotsuga Douglasii*) at Kew. It was presented in 1861 to the Royal Gardens by Edward Stamp, Esq., and was imported from Vancouver's Island.

spliced on, as narrated in the *Kew Bulletin* for 1896, and in the *Gardeners' Chronicle* for February 8 of the same year. This mast is the second which was presented by Mr. Stamp; the first was floated up the river from Rotherhithe, but was cut in two by a river steamer. Mr. Stamp, nothing daunted, had the pole spliced, and it was transferred to Kew.

tremendous crash, breaking into six pieces. Providentially, no one was hurt, and though it fell into a grove of young trees and shrubs, not one of these was injured" (see *Gardeners' Chronicle*, May 11, 1861, for full details).

Still undaunted, Mr. Stamp procured a second spar, 40 feet longer than its predecessor. This was landed at Kew, and erected by mast-makers from Woolwich Dockyard on May 2, 1861. On this occasion the mast was laid on the ground, its butt-end being dragged to the pit prepared for its reception, and the mast gradually raised by suitable tackle from the horizontal to the vertical position. The total length of the spar is 150 feet, of which 11 ft. 6 in. are in the bricked pit. From the surface of the ground to the cross-trees is 67 ft.; from the cross-trees to the topmost rigging another 67 ft.; from the rigging to the truck 13 ft. 6 in. The greatest diameter is 1 ft. 7 in.; the smallest, at the top, 7 ins. The total weight is 4 tons 8 cwt. 2 qr. A cubic foot of the timber weighs 58 lb. 12 oz.

The last stage in the history of this noble mast is shown in our illustration (fig. 77). It shows the Union flag at half-mast—a token of national mourning for our late revered Queen. Never, surely, was flag hoisted on a nobler spar, nor ever on a more solemn occasion. Our illustration is from a photograph taken by Mr. E. J. Wallis, Putney.

RAISING HARDY FRUIT TREES FROM SEEDS.

(Continued from vol. xxviii., p. 152.)

PLANTING-OUT THE SEEDLINGS, &c. — When the resulting seedlings have made six or more leaves, and showery weather prevails, remove their tap-roots, and plant them out a foot apart each way in nursery-beds, shifting them wider apart in successive years as they require more space. A quicker plan which many will be able to adopt is to graft the year-old seedling shoots on clean and well-nourished adult trees; if large trees bearing poor fruits exist, they may be headed back, and a number of scions worked upon it, attaching a conspicuous label to them on which their history should be written.

With regard to pruning, summer pinching is the best plan to adopt, as it tends to the early production of fruit-spurs, and the strengthening of the grafts without waste of vigour.

Dessert Apples and Pears should be selected for excellence of flavour and keeping qualities; beauty of form and appearance, though meritorious points, should have but secondary consideration. Efforts should be directed to the extension of the existing season as much as is possible, for the greatest amount of room for new fruits of merit will be found among the early and late varieties. For instance, a new dessert Apple would have to be superlatively good to hold its own if its season of ripeness fell contemporaneously with that of such varieties as Cox's Orange Pippin or Ribston Pippin; whereas if it was but slightly below the standard of those excellent varieties, it would prove a more valuable acquisition if it ripened at an earlier or later season. That splendid American Apple, Newtown Pippin, has so many points of merit that I have sown a considerable number of the seeds of imported fruits, and though the tree of the original variety is far too delicate for successful cultivation in this country, I am glad to record that two-year-old seedlings are far stronger and healthier than seedlings of British varieties sown at the same time, and that the leaves and wood exactly resemble those of their parent, also that the seedlings are all alike.

Similar remarks relative to the season of ripening in Apples applies to Pears. Marie Louise, Louise Bonne, Beurré Bosc, and Chaumontelle, are, with a few others according to locality, good all-round fruits such as will prove hard to beat; and any new Pear of excellence would be all the more valuable if it did not clash with these in its season of ripening. Of cooking varieties of both these fruits we have almost sufficient for every need,



FIG. 77.—THE FLAGSTAFF AT THE ROYAL BOTANICAL GARDENS, KEW, DURING THE MOURNING PERIOD FOR QUEEN VICTORIA.

It is believed to be the tallest spar in existence in Europe, and measures 159 feet in height. The age of the tree from which it was cut was estimated at 250 years. In 1896 it was found that the base showed signs of decay, in consequence of which the mast was taken down and a new base of pitch-Pine

Here arrangements had been made for its erection. "The spar was hoisted to the top of the derrick, and had no sooner assumed its erect position, than a puff of wind swung it round; after performing a majestic sweep in the air, the derrick's supports gave way, and the spar came to the ground with a

though improvements on any existing varieties are always welcome, especially if they are good keepers and travellers in conjunction with good cooking qualities.

In instances where one good and essential point in the fruit is lacking, it may be desirable to cross the seedling back with that parent in which the lacking point is most strongly marked, in this and every instance reversing the cross; for, with these plants, no degree of influence can be presaged with any certainty, as may be the case with primary hybrids having true species as their parents.

Seedling Peaches and Nectarines.—Peaches and Nectarines are not so wide in their range of variation, and, as a rule, much more satisfactory results may be obtained from them than from Apples and Pears. The process of raising the seeds of the Peach tribe is simple. I generally crack the stones as soon as I can get them, and sow the seeds in a pot placed in a heated frame; they germinate readily, and may be planted out in the following May, 2 feet apart each way, moving again in the second or third year fully 4 feet apart, and fan-train them to stakes to give the fullest exposure to the wood. A difficulty will now be found in most gardens in giving them wall-space for fruiting, such space being necessary, as their value cannot be approximated from fruits produced in the open; even existing varieties produce poor fruits in nursery beds. A compromise may be effected, however, by planting the seedlings 5 to 6 feet away from the wall, if the border is wide enough to admit of its being done, at which distance they will not materially harm those trees on the wall, provided the seedlings are not allowed to exceed 6 feet in height. They should be trained to stout stakes with cross-bars of Hazel or Ash rods. Seedlings in such a position will derive considerable benefit from the heat reflected by the wall, which is quite sufficient to allow them to ripen their fruits properly in ordinary seasons. [Buds could be inserted on the branches of bearing trees. *ED.*] Once a seedling has proved worth saving, it would be best to bud or whip-graft it upon stocks of the wilding Plum, for, if allowed to remain on its own roots in most soils, "yellows" is certain to make its appearance sooner or later. On very light, shallow soils the seedling Almond may be employed as a stock, as its roots tend to go deeper into the soil in search of moisture than the wilding Plum. Either of these stocks can be obtained from most hardy tree nurserymen, or they may be raised from seeds. Seedling Peaches and Nectarines growing in soils of dolitic formation are far less liable to "yellows," and may remain on their own roots in such material for a considerable length of time without a trace of the malady appearing. There is the greatest room for improvement amongst early Peaches; most of the July and August Peaches are in nowise first-class fruits, their flesh speedily turns mealy, and in point of flavour they are not to be compared with those ripening in September. Of seven varieties of early Peaches cultivated in these gardens in 1898, only one, Dr. Hogg, has passed muster as a good, all-round Peach, and most of the others have been rooted out as not being worthy of wall-space. The earlier Nectarines are not so markedly bad, many of the August varieties being quite as good as those ripening in September. *Geo. B. Mallett.*

(To be continued.)

THE WEEK'S WORK.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bicton, East Budleigh, Devonshire.

Forced Potatoes.—Afford abundance of air in fine weather to Potatoes, whether these are growing in pots, in hot-water pits, or in leaf-beds covered with frames. Those Potatoes that were planted at the end of the year will be fit for consumption at about this date, and in order to assist the maturing of the tubers, the quantity of water may now be

reduced. Potatoes planted in frames, &c., about the middle of the month of February will now require moulding-up, and if enough soil was put in at the start, this can be used for the moulding, otherwise warmed light soil must be employed. Afford tepid-water when the soil approaches dryness in the early morning hours.

French Beans.—Two sowings may be made under glass in pots or in boxes. These will be the last that will be required for the season. The varieties *Ne plus Ultra* and *Negro Long-pod* are excellent. Ply the syringe diligently amongst plants in bearing, and those that are growing but have no blossoms open, in order to keep red-spider in check. Afford a day temperature with pipe-heat of 70°, and with sunshine of 80°, and by night, 60° to 62°. Do not let the plants get dry at the root, neither sodden the soil with water.

Rhubarb.—If the old plantations were afforded a good mulch of rotten manure at the beginning of the winter, they may now be dug in, and some litter placed over the crowns as a protection against frost. Rhubarb-seed may be sown at this date on land where the roots are to remain, and when the seedlings are strong, they may be left at 12 inches apart, and at a later part of the year the weaker plants may be removed, and the stronger ones left at from 3 feet to 4 feet apart.

Asparagus.—Seed should now be sown in drills 1 inch deep and 12 inches apart, to be transplanted next spring, or a year later on. The seedlings should be thinned to 4 inches apart, when they are large enough to be got hold of. I replant when the seedlings are one year old; whereas some gardeners sow the seed where the lines are to remain, preparing the ground in the manner advised in these columns the second week in February. Let the land be turned with a digging-fork, then wait a few days, and rake it level and smooth before drawing the drills, which should be 20 inches apart. Instead of sowing all along the drills, put down a dozen seeds in patches 12 inches apart, and reducing to one plant only. No produce should be taken from either of these methods until it has had three years' growth. Planting is best done when growth is about to commence, which is usually about the second or third week in April. Let the plants be carefully lifted with a fork, expose the roots to the air as little as possible, but cover them with damp litter, &c., till replanted. Cut out trenches 4 to 6 inches deep with a spade, chopping close up to the line; place the crowns against this edge 2 inches below the surface, spread the roots out evenly, make firm with the feet, and rake the land as the work proceeds. If the locality is low and wet, or the soil of a very heavy nature, Asparagus should be planted in beds 3 to 5 feet wide, and 1 foot higher than the level of the garden, with alleys 2 feet wide between the beds.

Tomatoes.—Plants raised from seeds sown at the end of last month should be potted into 5 inch pots in good loam, with a sprinkling of bone-meal in it, potted firmly, and each plant tied to a neat stake. Place in a pit or house with a not higher temperature at night than 55° to 60°. If the tiny white-fly is troublesome, fumigate twice a week, or syringe the plants with Quassia-water for a few evenings.

Pot-herbs.—The part of the border intended to be planted with such species as Tarragon, Sorrel, Horehound, and Spear-mint, should be afforded a light dressing of rotten manure, and be deeply dug, well pulverising the clods in the proceeding. The plants or patches of roots should stand 10 or 12 inches apart, and in *quincunx* fashion. Seeds of Fennel, Borage, and Winter Marjoram, Chervil, Coriander, Dill, Rampion, Summer Savory, may now be sown in drills; and those of Sweet Basil and Pot Marjoram should be sown in heat under glass, and planted out in May or June. Common Thyme, Lemon Thyme, and Sage, can also be raised from seed, but better results come from cuttings of the last two put in a month hence on a shady border and kept moist.

THE HARDY FRUIT GARDEN.

By C. HERRIN.

The Protection of Fruit-tree Blossom.—The weather has been seasonable, and together with the cold winds and gloomy skies, has retarded the opening of the blossoms, and the flowering will be later than has been the case in recent years; but we may anticipate a very good set, bloom being

abundant. The blossoms of wall Pears will soon be open, and means should be taken to protect them till danger from injury by frost is past. Pyramids and bushes of moderate dimensions may be protected with Pea-stakes stuck in firmly round the trees sloping inwards, over these put a slight covering of bracken or tiffany, keeping this at hand should frosts appear imminent. Horizontally-trained cordons are easily protected with scrim canvas of the width of a yard or thereabouts. If a few stakes are stuck in, and the tops left a little higher than the cordons, so as to form supports, the scrim will clear the blossom; otherwise it may rest on the cordons without injury to the bloom in the least degree.

Plums and Cherries may be protected with fish-netting, or a temporary shelter may be afforded with branches of Spruce Fir, or Balm of Gilead Fir; but thick covering should not be kept over the trees for any length of time.

Peaches and Nectarines.—Although a covering is desirable when the nights are frosty, more harm than good results from applying protection before there is any danger to the bloom. A coping of thick boards 12 inches in width fixed under the stone or other wall-coping affords a good deal of protection, and if moveable scrim, frigi-domo, or canvas curtains can be fixed to the outer edge of the boards, it will be all that is necessary. Poles should be fixed so that the curtains are kept away from the face of the wall. In the event of frosts of unusual severity, blinds and other coverings should not be removed until a thaw has taken place.

Alpine Strawberries being easily raised from seeds, this method should be adopted in preference to planting runners. Seed can now be bought in distinct varieties, and if sown at the present time thinly in shallow well-drained boxes or pans, filled with light soil, and just covering the seed, they will germinate quickly. If a large number of plants is required, a frame may be employed. When large enough, prick off at about 2 inches apart on a shady border, until large enough to plant out in beds and lines. The ground intended to carry these varieties should be well dug and manured, and after allowing a few weeks to settle, it should be made firm and smooth. The plants may stand at 12 by 18 inches. All runners should be nipped off until the plants have become established. These young plants will carry fruits when a year old, from June to October.

FRUITS UNDER GLASS.

By MALCOLM MCINTYRE, Gardener to Sir CHAS. TENNANT, The Glen, Innerleithen, Peeblesshire.

Early Figs in Pots.—The fruits of early varieties, such as *Early Prolific*, will soon be showing signs of ripening. When such is the case, syringing had better be discontinued, and a smaller quantity of water be afforded the roots, or the fruits will be insipid. But during the swelling of the fruits on these or succession trees a copious supply of water is needed. A free circulation of warm air is necessary to secure well flavoured fruits. Admit a little outside air whenever practicable. The temperature should be 60° to 65° at night, 70° to 75° by day from fire heat, and 80° to 85° with sun, rising 5° to 10° after closing the house in the afternoon. No other fruit-tree produces roots so abundantly as does the Fig, when measures are taken to encourage them by a mulch of about 3 inches in thickness of partially-decayed manure, applied when the trees are fairly in growth. It is astonishing what heavy crops Fig trees will carry in a small quantity of calcareous, firm, well-drained soil when mulched as directed, provided they are grown in a very light house. One can scarcely be too liberal to them, as they will appropriate and benefit by almost any amount of liquid manure. Trees in pots will of necessity require such help more frequently than those planted out, especially when reversed turves have been placed over the rims of the pots to encourage surface roots for absorbing the stimulants applied in liquid form.

Setting Grapes.—During the next few weeks the bulk of Muscat and other moderately early and mid-season varieties will be in flower. A great deal will depend upon the treatment the Vines are afforded at this critical stage, and this remark applies to the free-setting varieties as well as to those of an opposite character. Stoneless berries usually fail to swell to a serviceable size, and those only that are furnished with their full complement of stones can be depended upon to swell to a great

size. All ought, therefore, to be studied, not Muscats alone, and that, too, some time in advance of the flowering period. Care should be taken to give the bunches all the daylight and sunshine possible, so as to obtain flowers on stout foot-stalks. The least that can be done is to allow a space of 12 inches or more between the lines of laterals. Those bunches shaded by a heavy canopy of foliage rarely set so well as they would do otherwise. To assist Muscats to set well an increase of temperature is desirable during the flowering period, 70° by night, increasing to 75° and 80° with air in the daytime. A temperature of 5° lower all round is sufficient for Black Hamburg, Gros Maroc, Madresfield Court, Foster's Seedling, and Euckland Sweetwater. Overhead syringing must then be discontinued altogether. Keep the house comparatively dry till the berries are set, after which resume the damping down of the walls and floors at least three times during the day, keeping the evaporating troughs constantly filled with water. Various methods of distributing the pollen are adopted, though it is doubtful if any surpasses the plan of carefully drawing the hand over the bunches daily, this being done about mid-day. When the pollen is abundant and dry, it can be readily distributed by smartly tapping the rods to make sure of thorough pollination; but it is advisable to transfer it to the moist pistils of Muscat flowers by carefully passing the hand over the bunches, or this may be done with a good sized camel's-hair brush. As was said in a previous Calendar, the Black Hamburg pollen is best to fertilise the Muscat; or, if Madresfield Court or Foster's Seedling happens to be in flower at the same time as the Muscats, pollen grains from these free-setters might well be used for the latter. It is not necessary to handle or fertilise the free-setting varieties, but if done it might be the means of increasing the size of the berries.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HUSSEY PACKE, Esq.,
Prestwold Hall, Loughborough.

Plants that flower in the Winter.—*Begonia ascotensis*, *B. fuchsioides*, *B. Knowsleyana*, *B. manicata*, *B. parvifolia*, *B. socotrana*, and *B. Weltonensis*, *Eranthemum*, *Plumbago rosea*, *Libonia*, *Pentas carnea*, *Eupatorium*, *Lasiandra macrantha*, *Thysanotus rutilans*, and *Euphorbia Jacquinæiflora*, should now be struck from cuttings, which may, with the one exception of the *Euphorbia*, be inserted in small pots and plunged in a propagating-frame. The cuttings of the *Euphorbia* need careful selection; only those which are maturing and are furnished with a heel of the one-year-old wood should be taken. Place these in pots of sandy loam and peat, eight or ten cuttings in a pot, which place in a larger pot, sufficiently so to admit of a piece of glass or a bell-glass being used to cover them. The sheet of glass or bell will require tilting for an hour or two daily to allow of the escape of moisture.

The Greenhouse.—*Gladiolus The Bride*, *Ixias*, *Sparaxis*, and *Lilium longiflorum*, may be brought into a warmer house, so as to bring them into flower. Tie-in shoots of *Lapageria*, otherwise they will become entangled, and difficult to disentangle without damage being done. Pot summer-flowering *Chrysanthemums* into 3-inch pots, and place them in a cold frame for a time.

The Plant Stove.—If the repotting of the general collection of plants is finished, let the temperature be high enough by day with a small advance by night to promote vigorous growth; and ply the syringe, and maintain a humid state of the air by damping the paths. Let the house be closed at about 2 P.M., and the temperature be allowed to reach 90° or 95° by sunheat. Not much artificial heat will now be required in order to maintain a night temperature of 68° to 70°, and a day maximum of 75° to 80°. Boil 1 lb. of soft-soap for ten minutes in 1 gallon of rain-water (or larger quantities in the same proportion); use $\frac{1}{2}$ -pint of this mixture in 4 gallons of water for syringing purposes twice weekly, and if mealy-bug be troublesome add 8 oz. of petroleum. When it is necessary to use the petroleum mixture, I should advise it being done about 5.30 to 6 P.M. on dull days only. By using this petroleum emulsion occasionally, much labour will be saved in checking the spread of mealy-bug, and a glossy appearance is imparted to the leaves.

Ferns.—These plants now growing freely should be afforded abundance of moisture at root and in the

air. The deciduous varieties, *Leucostegia immersa* and *Acrophorus chærophyllus*, now growing freely, should be top-dressed and afforded water liberally. *Lygodium scandens*, a useful climbing Fern for covering walls, trellises, balloons, &c., requires very frequent attention at this season in order to display the plant effectively; each young frond being secured to fine bouquet-wire. The plants require an abundance of water at the root during growth, and to be frequently syringed.

Pits and Frames.—The late successions of *Hyacinths*, *Tulips*, *Polyanthus Grand Monarque*, and *Prince of Wales Narcissus*, *Poeticus ornatus*, as well as late varieties of *Tulips*, should be shaded so as to prolong their flowering season; and plenty of air afforded when there is no actual frost.

Valloia purpurea.—Repot these bulbs in a mixture of loam, leaf-soil, and sand, and place them in a temperature of 55°; and when their growth is finished, i.e., by the end of the month of June or a little later, place them on a bed of coal-ashes out-of-doors.

Salvia splendens and similar varieties of *Salvia* may now be potted singly, and be placed in a house having a warmth of 55° to 60°, syringing and shading them till root-action takes place; they may then be afforded a more airy situation, with full exposure to the sun. Keep them pinched as occasion requires, and as a means of keeping them in symmetrical shape.

THE FLOWER GARDEN.

By T. H. SLADE, Gardener to Lord POLTIMORE,
Poltimore Park, Exeter.

Weed-Killer (POISON).—April usually affords a favourable time for applying a weed-killer to garden-walks. This labour-saving article may be purchased either as a liquid, or as powder. The powder is sold in tin boxes, and in this form is convenient for small consumers. Where the walks about a place run into miles, the liquid is the easiest and more convenient form. The right time to apply weed-killer is when the ground is moist, the ground in this condition holding the weed-killer near the surface, and it does not absorb so much of the poison as would be the case in dry weather. The state of the weather should also be studied, as a day or two of fine dry weather after applying it will give the best results. The application of the dressing should be properly carried out, enough being afforded as will penetrate to the roots of the weeds; and the surface of the walks should be evenly sprinkled, care being taken that not any falls on the turf. It should be understood by all engaged in the work that the stuff is very poisonous. If the walk is mossy, rake the surface over with a sharp-toothed iron rake, and then apply the weed-killer, otherwise the moss will not be destroyed. Let all walks made of building-gravel be swept and rolled often.

Tennis, Croquet, or ordinary Lawns, should be swept and rolled when the surface is dry. If there are inequalities where the turf ought to be level, these should be made good, and all bare patches repaired either with seed or turf. Finely-sifted quick-lime mixed with loam will get rid of moss; and as a manure for exhausted turf, basic slag and a small quantity of nitrate of soda may be applied. A dressing of nitrate of soda may be applied in May and June in showery weather. Mowing machines should be put in order, and the cutting parts sharpened. If the first mowing be done with a scythe, cutting the grass closely, and the lawns thoroughly swept, the mowing-machine may be used afterwards with safety.

The Flower-beds.—The spikes of *Hyacinths* should be supported by neat sticks painted green, so as to be inconspicuous, or by suitable iron supports, care being taken to have them longer than the spikes, and to leave the ties of bast, &c., loose enough to permit of upward growth. Tall-growing *Tulips* are usually the better for support, as it spoils the effect of a bed of these flowers if they droop. *Polyanthus*, *Wallflowers*, *Myosotis*, *Silene*, *Limnanthes*, &c., will soon be in flower; and after all, these pretty old-fashioned flowers are perhaps the best for filling the beds, and if it be a question of expense they certainly are to be preferred. They last longer in flower than bulbs. Let the soil be stirred with a Dutch-hoe, the edges of the beds where these are turf being trimmed sharp and neat.

Hedges of Evergreens.—The trimming annually afforded hedges consisting of *Yew*, *Box*, and *Thuia*,

may be effected with the hedging-shears; but *Laurel*, *Holly*, *Euonymus*, or other plants with large leaves, with a knife or *sécateur*. If a hedge is close and high enough, let the trimming be closely done, whilst young hedges not of their full height and thickness may have more growth left at the top. If both sides of a hedge are visible, a rounded top has the better appearance, and it is not so stiff and formal as a flat top. An enclosing hedge of a garden laid out in the old Dutch manner should have a flat top, as being more appropriate. If the hedge forms a screen or a background to a border, the top may be cut to a bevel, which will appear to add to its thickness.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. I. MEASURES, Esq.,
Cambridge Lodge, Fludden Road, Camberwell.

Disa grandiflora.—I have never cultivated this species for more than four years under the same conditions as are afforded to other cool-house Orchids, but never satisfactorily in a cool greenhouse where the Cape Heaths were in every way satisfactory. Here the plants were subject to a large amount of strong light and free ventilation at all times, excepting frosty nights; they were syringed overhead every morning and afternoon during the active season of growth, and were not allowed to suffer lack of moisture at the roots at any season of the year. The pans in which they grew were well drained, with six to nine tubers in each, about an inch apart. The potting compost consisted of good fibrous peat, two portions to one of sphagnum-moss, mixing sufficient rough sand and crocks to retain the compost in a desirable condition, making the compost moderately firm about the tubers.

East Indian-house.—*Angræcum Ellisii*, *A. fallacatum*, *A. modestum* (*Sanderianum*), *A. Leonis*, and the sweet-scented *A. fastuosum*, *A. citratum*, and other small-growing members of this genus, will now be fast developing flower-spikes. One is inclined, as a rule, to keep plants moderately dry at the roots during periods of dull, cheerless weather, but need to be afforded particular care during the time the flower-spikes are developing, and to place them in the warmest portion of the house. If any member of the small-growing section of *Angræcums* be allowed to become dry at this period, a portion of the scape will most likely fail to produce flowers. Do not report any of the plants until the flowering stage has been passed. These species are best cultivated in baskets and suspended near to the roof-glass; they require liberal drainage material, and the potting compost should consist wholly of chopped sphagnum-moss, pressed firmly about the base of the plants. *A. sesquipedale* is, perhaps, the finest species in the genus, and one of the most attractive Orchids in cultivation. There are two varieties, one flowering in the spring and early summer months, the other during the dull winter months; the latter rarely flowers well in smoky districts. This variety should now be repotted if necessary, but it is not advisable to turn the plants out of their pots annually. A better system is to clear away the old compost and renew the drainage where necessary, leaving the roots undisturbed where they have become attached to the sides of the pots, and filling in the top with good living sphagnum-moss, pressed moderately firm. Water the plants thoroughly with rain-water as soon as the potting has been completed. If a plant has become leggy through the loss of the basal leaves, cut the plant down, so that it may be made to present a more desirable appearance. Avoid damaging the living roots in the operation. It is better to allow a liberal amount of pot room, when repotting, than to run the risk of breaking the roots in endeavouring to get them inside smaller pots. The summer-flowering form should be attended to after the flowering stage. *A. eburneum* is a noble plant of the tall-growing section, producing flower-spikes 4 or 5 feet long, and is one of the easiest plants to cultivate in the genus. The hybrid *A. Veitchi*, derived from the crossing of *A. eburneum* and *A. sesquipedale*, has the intermediate characteristics of the parent species, and grows freely under the same cultural conditions. *A. Scottianum* is a distinct species, with terete stems and foliage, and produces its lovely white flowers generally in pairs. I find it succeeds best when grown in pots, a teak-wood cylinder being placed in the centre, and covered with fresh living sphagnum-moss, around which the plant can entwine. The plants require a liberal amount of moisture during the active season of growth.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

APPOINTMENTS FOR APRIL.

WEDNESDAY, APRIL 3	Royal Caledonian Horticultural Society's Show, in Waverley Market, Edinburgh.
THURSDAY, APRIL 4	Linnean Society, Meeting.
FRIDAY, APRIL 5	Good Friday.
SATURDAY, APRIL 6	Royal Botanic Society's Meeting. Société Française d'Horticulture de Londres, Meeting.
SUNDAY, APRIL 7	Horticultural Exhibition, at Mont St. Amand, Ghent, Belgium, by the Ligue Horticole (3 days).
TUESDAY, APRIL 9	Royal Horticultural Society's Committees, Meeting (Daffodil competition). Durham, Northumberland, and Newcastle Botanical and Horticultural Society's Show. Rose Congress at Nice, in the Palais d'Agriculture.
WEDNESDAY, APRIL 10	Shropshire Horticultural Society's Show, at Shrewsbury.
THURSDAY, APRIL 11	Cornwall Daffodil and Spring Flower Society's Show, at Truro (2 days).
TUESDAY, APRIL 16	Brighton and Sussex Horticultural Society's Show (2 days).
THURSDAY, APRIL 18	Linnean Society, Meeting. Royal Botanic Society, Meeting. Manchester Royal Botanical and Horticultural Society's Meeting, Show in St. James' Hall (3 days).
TUESDAY, APRIL 23	St. George's Day. Royal Horticultural Society's Committees, Meeting.
WEDNESDAY, APRIL 24	Royal Horticultural Society's Examinations.
THURSDAY, APRIL 25	Norfolk and Norwich Horticultural Society's Exhibition.
SUNDAY, APRIL 28	Ghent Horticultural Exhibition (the 165th) (3 days).

SALES FOR THE ENSUING WEEK.

MONDAY, APRIL 1.—Carnations, Roses, Greenhouse Ferns, Gladioli, &c., at Protheroe & Morris' Rooms.

WEDNESDAY, APRIL 3.—Azaleas, Decorative Palms, Tuberoses, Hardy Perennials, &c., at Protheroe & Morris' Rooms.—At Stevens' Rooms, 38, King Street, Covent Garden. A great consignment of Shrubs from Holland; Roses, Fruit Trees, Lilies, New Fruits, &c.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—45° 9'.

ACTUAL TEMPERATURES:—

LONDON.—March 27 (6 P.M.): Max. 40°; Min. 28°.

March 28 (11 A.M.):—Fine, cold, sleet-showers.

PROVINCES.—March 27 (6 P.M.): Max. 43°; Scilly Isles; Min., 28°, Shetland.

FROM a *Bulletin* of the Horticultural Division of the Cornell University Experiment Station

we learn that the Chrysanthemum industry in New York State involves more capital even than the growing of Peaches. When the Chrysanthemum craze began in America in 1888, there were loud complaints from those florists who thought there would be no great permanent popularity after the first fever was passed. At first, the Chrysanthemum seriously infringed for six weeks upon the year-round favourites, the Rose, Carnation, and Violet, but it must now be considered one of the four staples of greenhouse floriculture. The times of universally excessive prices are for ever past, the readjustment to a final acceptance of this new-comer's permanent place is nearly made, and the Chrysanthemum has become distinctly a flower of the people.

The mission of the Chrysanthemum is to fill the dull interval between the middle of October and the last of November. The skilled amateur, it is true, may prolong the season by early

flowers out of doors, and by late ones in the greenhouse, but it is at a cost of time, money, and skill that the people cannot give. He may even have large flowers in every month of the year, at a large price, but the true Chrysanthemum niche is a period of about six weeks, and the people would not want Chrysanthemums the year round, even if they could have them.

The only possible objection to the Japanese Chrysanthemums is that in few, if any, districts is it possible to grow them out-of-doors—that is, the grower cannot produce large, exhibition flowers, or even typical ones, in satisfactory quantities out-of-doors. Never until the development of the peculiar forcing-house industry, the commercialising of floriculture on a vast scale, was it possible for a flower grown almost exclusively by the florists, and under glass, to win its way into the hearts of the masses. It is the greater general use of cut flowers that makes floriculture unique. The popular demand for long-stemmed flowers, and for some favourites in every month of the year, has conspicuously changed the methods of cultivation of Chrysanthemums, Roses, and Violets. Persons buy cut flowers, keep them in vases as long as they are thoroughly satisfactory, and are very sensitive to the delights of arrangement for form and colour effects. The keeping qualities of Chrysanthemums are extraordinary, and this happy circumstance is one reason why this flower has so won its way into the hearts of the masses.

Nevertheless, the cry is sometimes raised that the Chrysanthemum is a "rich man's flower," but the love of the blossom is only the beginning of Nature-wisdom. Until there is developed a feeling for the plant, there is no deep sympathy with or real insight into the meaning and mystery of Nature. The best relation with plants is attained by living with them, and thus appreciating every stage of their life cycle. No one can own a Chrysanthemum—and the like remark may be made of any other flower—in the highest sense, without a year's comradeship with the plant. You must produce it—evolve it, as it were, from your own understanding of life.

In dealing with the subject of controlling the colour of Chrysanthemums, it is said that out of thirty-one pink flower varieties of different shades, and grown under the same conditions, fourteen turned out to be practically pure white, while three others showed much less colour than the descriptions call for. This was no accident. The varieties were true to name. The flowers averaged six inches in diameter, and were satisfactory in every other respect. The colour alone was lacking.

The economic importance of this fact is very considerable. At least a fourth of all the new varieties are advertised to be pink. Perhaps, also, a fourth of all the cut flowers sold are pink, or something near it. The market reports, at any rate, often quote only four groups—white, yellow, and pink Chrysanthemums, and "other colours."

The case would not be so serious if all the pink sorts were able to lose their colour gradually and uniformly, and still remain attractive. Unfortunately, they do not; as a rule, they fade out unevenly, and look weak, blotched, undecided. The mass effect may be good, but one cannot look at the flowers closely. The control of colour, therefore, becomes a problem of great practical interest. It is doubtless a complicated problem. There seems to be at least six factors concerned, any one of which may change a pink to a white. (1) The choice

of buds is said to be sufficient in some cases. (2) Over-propagation is generally believed to weaken colours. (3) Temperature and ventilation (the two factors can hardly be separated in greenhouse-practice throughout the entire year), are advertised to produce three distinct and desirable shades in Mrs. Col. Goodman. (4) Mere position (in pots, beds, or benches) should not in itself make a difference, but in practice it does. (5) The effect of shade is variously stated. (6) And, most complicated of all, the manurial food factor is known to influence colour, but just how is a mystery.

Two factors were singled out for experiment at Cornell University. First, to ascertain whether shading the flower-buds would make the flowers a darker or lighter pink. Second, to determine whether a liberal supply of nitrogen as manurial food would weaken or deepen the colours. Sixty plants representing seventeen varieties were used in the two experiments. Each plant had four long branches, and each branch bore one flower. The flowers averaged about 5 inches in diameter. The cuttings were rooted early, and the plants were shifted successively to 6-inch pots, in which they were flowered. For each the same potting-soil was used. This consisted of three-parts rotted clay-sod, one part sand and bog-mould, but no manure. The object was to produce typical potted plants of a saleable character by the methods commonly used by florists.

In the shading experiment, twenty-four plants were exposed to the sunlight at every stage of their growth; while thirty-six plants were shaded soon after the flower-buds appeared by means of a rather heavy coat of whitewash applied to the glass directly above them. Some of the varieties were shaded from the time the buds were the size of marbles until they came into full flower. Others had already burst their buds, and were out an inch or more before the glass overhead was whitewashed. This remained until the flowering season was over.

In the nitrogen experiment, twenty-three plants were given only the amount of nitrogen which all the potted plants received; while thirty-seven plants were given an extra supply of nitrogen, in the form of nitrate of soda, applied in a liquid form. The applications were begun when the plants were well-rooted in the flowering-pots, at intervals of four days. When the flower-buds appeared, the manurial applications were stopped.

The results of these experiments were very interesting, and contrary to what was expected. Shade is said by some to deepen the colour, but the reverse was true in this case; the difference was perceptible at once in five varieties. In only two cases, however, was this difference enough beyond question to destroy their saleable character. The fading of the pink varieties after the flowers are once fully expanded is beyond control at present.

The results of the nitrogen experiment were not certain enough to be published, but it is safe to say that the extra amount of nitrogen did not seem to deepen the colour in any case.

Next to the pink series of colours, the bronzes seem to be most sensitive, and next come the dark reds.

DICKSONIA ANTARCTICA.—Before now we have figured this noble Tree-Fern coated with snow. This contingency must occasionally happen, even in Cornwall. Our illustration is taken from a specimen in the gardens at Penjerrick (A. Fox, Esq.). We hope, shortly, to give other illustrations of this fine garden (see fig. 78, p. 205).

HANDBOOKS OF PRACTICAL GARDENING. — Mr. JOHN LANE, Vigo Street, London, is about to issue a series of handbooks on this subject, under the general editorship of Dr. HARRY ROBERTS. Mr. CHARLES STOTT is announced as the author of the book on Asparagus, Mr. TALLACK will supply the book of the Greenhouse, Mr. H. W. WARD that on

as to serve as a handy text-book for the market grower, yet at the same time so lucid and free from unnecessary technicality as to provide the novice with an easy and pleasant guide. The books will be attractively printed and bound, and will be illustrated where desirable. A novel feature will be provided in the case of volumes on fruits and

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—His Majesty the KING has been graciously pleased to continue his patronage of the Gardeners' Royal Benevolent Institution. We may remind our readers that the sixty-second festival dinner in aid of the funds of this institution will take place on May 22, the first day of the Temple



FIG. 78.—*DICKSONIA ANTARCTICA* IN THE GARDENS AT PENJERRICK, CORNWALL (R. FOX, ESQ.). (SEE P. 204.)

(Photographed by Mr. E. W. Meyer.)

the Grape, whilst the Editor himself will contribute the book of Old-fashioned Flowers. It has been thought that many people—both amateurs and market growers—are often hindered by the difficulty of obtaining precise and up-to-date information on the various branches of garden craftsmanship. It is hoped that the series of handbooks of practical gardening will meet this want. Each volume will be written by an expert on his subject, and will aim at being so complete, practical, and up-to-date

vegetables by the addition of chapters dealing with their cooking and preparation or the table. Cooks and gardeners, like poets, are born, but they must also learn.

LINNEAN SOCIETY.—On the occasion of the evening meeting, to be held on Thursday, April 4, 1901, at 8 P.M., the following paper will be read:—"On some British Fresh-water Rhizopods and Heliozoa," by Mr. G. S. WEST, B.A., A.R.C.S., &c.

show, when Lord LLANGATTOCK will preside. The Secretary will gladly receive the names of any gentlemen who would kindly act as stewards, or who would like to attend the dinner. Offices, 175, Victoria Street, London, S.W.

THE SURVEYORS' INSTITUTION: COUNTRY MEETING AT SOUTHAMPTON.—It has been decided, on the invitation of the Hampshire, Dorset and South Wilts Provincial Committee, to hold the

next county meeting at Southampton on May 30 and 31. The first day will be devoted to papers and discussions, with a dinner in the evening; the second day to excursions to various places of interest in Southampton and its neighbourhood. Full particulars will be issued later on.

CLEMATIS VILLE DE LYON.—We are informed that this handsome variety was not raised, as we stated, by M. VIVIAND MOREL, the editor of the *Lyon Horticole*, but by M. FRANCISQUE MOREL, Nurseryman, Lyon-Vaise. A coloured figure was given in the *Revue Horticole*, 1899, p. 184.

FRUIT FROM THE WEST INDIES.—The steamer *Port Morant* arrived at Avonmouth recently fully laden with fruit, besides carrying thirty-five passengers and mails, being the first of the Imperial direct West India Mail line to make the return voyage from Jamaica to Bristol. The vessel had a stormy homeward trip. Interest centred in the condition of the Bananas which formed the main part of the cargo, 18,000 bunches being stored in bins, the temperature of which was regulated by air-currents. Mr. ROBERT THOMSON, formerly head of the Jamaican Botanical Department, has been appointed adviser to Messrs. ELDER, DEMPFSTER, & Co., owners of the line, with regard to the growing and packing of fruit, the appointment giving great satisfaction in Jamaica, where his scientific attainments are greatly appreciated. Bananas in various degrees of fulness were packed, so as to thoroughly test the appliances of the vessel, and all the fruit arrived in splendid condition. The London and Liverpool buyers, who had an opportunity of inspecting the bins, expressed gratification at the excellence and soundness of the fruit. The whole cargo was sold, mainly for London, Liverpool, Manchester, and Bristol markets. The vessel also brought a large consignment of Mangos, Pine-apples, and Oranges, all of which stood the voyage remarkably well, fully answering the expectations formed as to the capabilities of the line in developing new trade with the West Indies.

THE ANCIENT SOCIETY OF YORK FLORISTS which, as the annual report reminds us, was established (time immemorial), and re-established 1760, has a membership of about 780, and its total receipts for last year amounted to £594 16s. 4d., its expenditure for the same period being £586 1s. 9d. There is a reserve fund at bank of £197 4s. 5d. Four minor shows were held in 1900 in the Guild-hall, the competitors at each being members of the Society. The Chrysanthemum show alone has open classes, and it is well known as one of the most important exhibitions of Chrysanthemums and fruit in the north of England. The dates of the minor shows to be held during the present year are April 17, May 22, July 17, and September 4; the Chrysanthemum show has been fixed for Nov. 13, 14, and 15, and entries for same will close on November 6. A copy of the schedule may be obtained from the Secretary, Mr. GEO. F. W. OMAN, 38, Petergate, York.

"THOMPSON'S GARDENERS' ASSISTANT."—The Gresham Publishing Company informs us that the third volume of the new edition, which has been considerably delayed in publication, will be ready next month. The delay that has taken place, Mr. WATSON, the editor, explains, has arisen from the effort to have the work thoroughly up-to-date, to secure which the final revision of certain important articles was postponed until the last moment, when it was found impossible to get these articles put through with sufficient expedition, owing to the illness of some of the contributors. The necessity of waiting for certain plants to be in condition for illustration has also caused delay. The editor does not anticipate that similar delays will occur in the case of the remaining volumes.

EXPENDITURE ON PUBLIC BUILDINGS.—Re-erection of ornamental iron screens, £1,000; re-erection of sheds, fences, &c., £350. Hampton Court Gardens: reconstruction of glasshouses,

£1,000. Kew Gardens: new pumping-house, mains, &c. (total £2 525), on account, £600; annexe to museum, £360; additional stabling (£450), on account, £100; temperate-house, flag pavement, £100; ditto, soft water supply, £225; Melon-ground, new wall £100; herbarium, new wing, on account, £500. Natural History Museum: further on account of the installation of electric light throughout the building (total estimated cost £7500), £500; adaptation of new room for taxidermist, £150; enclosing a portion of the open basement, £160; works and alterations of a minor character, £500. *Builder*.

CAPE FRUIT.—The steamer *Norman*, from Cape Town, which arrived at Southampton on Saturday last, brought the following fruits:—Grapes, 1,180 packages; Plums, 214; Peaches, 24; Nectarines, 32; Pears, 58; and Apples, 27 packages.

A PRUNING COMPETITION.

THE above is one among the many competitions held during the year by the Madresfield Agricultural Club, an organisation established some eight or ten years ago for the purpose of assisting and improving the various departments of agriculture and horticulture, by promoting and encouraging a mutual interest in the cultivation of the land, as between owner, farmer, and labourer, with the hope of stemming the exodus of the rural labourer into the already over-crowded towns. With these objects in view, a series of competitions is held from time to time, on some seasonable subject, such as winter and summer pruning of hardy fruit-trees, mowing, reaping, hedging, thatching, sheep-shearing, milking, ploughing, and other rural operations.

Pupils are received and placed under experts who are competent to afford instruction, and give demonstrations of the various operations, which are followed by lectures. The farmer is shown how he may, by the help of science, improve his breeds of cattle, sheep, pigs, horses, poultry, &c. A course of instruction in veterinary practice enables him to understand minor complaints and first-aid principles. A knowledge of hardy fruit culture, butter-making, the nature of roots, grasses, and seeds is also included in the scheme of technical instruction.

The labourer is not overlooked, for experts are employed to teach him the how and wherefore of the various operations of pruning, hedging, and much more that require a certain amount of skill in their execution. Altogether, good seed is being sown, and it is to be hoped that good results will be brought forth in the course of time.

It is with pruning that we are now concerned. The competition took place on February 21, at Hanley Castle, in an ordinary farm orchard, kindly lent by Mr. A. Tilt. The trees were standard Apples, planted about thirteen years ago, and had not been pruned since planting—very serviceable trees in testing the capabilities and knowledge of the competitors.

Ten competitors entered for the open class (A). The trees had been previously selected as uniform in size as possible, and numbered. Duplicates of these numbers were folded and placed in a hat, and thus drawn or balloted for. All being in readiness, at a given signal each pruner commenced his task, three hours being allowed to prune his four trees. As each pruner finished his work he reported the same to the stewards appointed, and this time record was handed to the judge for consideration with the quality of the work done, and its point-value therewith. Mr. Alex. Dean was the judge, and his awards gave general satisfaction. He addressed the competitors at the close, and he lucidly explained the pros and cons as regards the errors and mistakes of the unsuccessful ones. Most of the competitors used the saw too freely, and "over-pruned," he said, instead of adopting the safer and more judicious thinning out of the smaller wood. H. Bishop took 1st prize, being closely

followed by W. Hurren, a boy of sixteen, who had received a month's instruction as a pupil, and who will have to be reckoned with in future competitions. He was over-careful in his first two trees, consequently had not quite time to finish his last two properly. The whole character of the work was good, and several extra prizes were awarded. Only one competitor in Class B, for farm hands only; awarded 3rd prize to W. Willis. *W. Crump, Madresfield*. [Well done, Madresfield! Ed.]

THE SEED TRADE.

PEAS.—From all accounts the seed business, wholesale and retail, is still very active, and though the orders for vegetable seeds have been despatched, supplementary ones are coming in. The flower-seed department is in full swing, and agricultural seeds are beginning to be in brisk demand. The time is at hand for making and sending out contracts, the arrangement and sowing of trials—a process which may be said to be going on all the year round—then stock-taking, &c., with the preparation of bulb orders in the not distant future.

In reference to the demand for Peas, it can be stated, on the authority of Mr. N. N. Sherwood, who is in a position to speak for the trade generally, that the demand for round-seeded Peas, except when required for such special purposes as bottling, boiling, &c., shows some decline, which has been noted for several years past, while the better class of wrinkled Peas are in increasing requirement. Mr. Sherwood stated that his house had experienced an extraordinary demand for early Peas, such as Harrison's Eclipse or Earliest-of-All, which is regarded in the trade as an improved Kentish Invicta, and for this particular variety they had experienced applications beyond any previous year.

Still, the market gardeners are found sowing the round-seeded varieties somewhat considerably for the reason that they possess generally a more robust constitution than the wrinkled varieties, and, therefore, can be sown earlier in the season, though, as has been well observed, "the mellow sugary flavour of the best wrinkled varieties may be absent." Hence it is there has been a great demand for Laxtons', Ameer, Coopers' Improved Fillbasket, Lye's Favourite, Pride of the Market, Suttons' Bountiful and Telegraph. Varieties which have superseded the old sorts of years ago.

Among the early dwarf sorts of wrinkled Peas, Gradus has been in such demand that the trade may be said to have sold out of bulk, save those retained for stocks, William Hurst, The Sherwood, and others.

The market gardeners about the country have come to recognise the advantage of growing some of the better class of wrinkled Peas for their main crops in preference to old but inferior round varieties, though in some of the colder districts of the country the more hardy round-seeded varieties were still sown for early and main pickings, and the wrinkled varieties when the condition of the soil became more favourable to seed germination.

For early crops, where they could be sown with safety, the market gardeners sow Eclipse, William 1st, Laxtons' Ameer, Bountiful, and Gradus. For a second crop they sow Prince of Wales, John Bull, Triumph, Duke of York, Yorkshire Hero (still a favourite with them), and Duke of Albany. Telegraph, once so popular with the market gardeners, is not nearly so much grown as formerly, except in certain districts, preference being given to that universal favourite, Duke of Albany. For the latest crops they sow Autocrat, a variety which has quite taken the place of Omega for this purpose; Sutton's Late Queen, Captain Cuttle, and The Gladstone, are also excellent varieties for the latest gatherings.

Broad Beans.—These have been in brisk demand, especially the green-seeded varieties; in fact, seed of Green Longpod and Green Windsor is almost unprocureable.

French Beans of the dwarf varieties.—There has been an extraordinary demand for Canadian Wonder; Mr. Sherwood said twenty times more than for any other variety, which is conclusive evidence as to its popularity; and this notwithstanding other leading sorts have been in brisk demand.

Runner Beans.—In many parts of the country strong preference is shown for the old type of Scarlet Runner Bean, though there is an increasing demand for the improvements upon it, such as Ne Plus Ultra, Hill's Prize, and Best-of-All. The Painted Lady type, once so popular with past generations of gardeners, is said by Mr. Sherwood to be "fading out;" though one or two of the leading seed houses are found offering an improved type, and it is undoubtedly being somewhat displaced by the above-named advances upon the old Scarlet Runner. The scarlet and white blossoms of the Painted Lady are nevertheless so attractive that the type is worth growing as a garden plant. *Pisum.*

SUCCULENTS.*

(Concluded from p. 185.)

PILOCEREUS.—The chief distinguishing mark of this sub-genus lies in the long hairs which arise from the areoles. *P. senilis*, the Old Man Cactus, is the commonest. The cylindrical stems sometimes attain 20 feet in height, and the silvery hairs which cover their upper parts, make them very curious objects. Other interesting species are *P. Houletti*, and *P. Dautwitzii*.

ECHINOCEREUS.

The characters which mark out the species of this section are derived chiefly from the flower and seed; the flowers are of various colours, and last for a long time. *E. Engelmanni*, a Californian species, and *E. Fendleri*, one of the most hardy, are amongst the best.

ECHINOPSIS

includes about thirty species, distinguished from *Echinocereus* by their long funnel-shaped flowers, and from the other divisions of *Cereus* by their dwarf globular stems. The flowers spring from the sides of the plants, and this marks them from *Echinocactus*; all are easily grown. *E. Eyriesii* has white flowers, measuring 4 inches across, and very fragrant. *E. multiplex* and *E. oxygona* are large-flowered Brazilian species. Amongst ribbed Cacti may be mentioned *Melocactus*, or the Turk's Cap.

PHYLLOCACTUS.

This genus has flat, leaf-like shoots, with the areoles in the notches of their edges. There are thirteen species, chiefly epiphytes from South America; they are extremely showy, and, as they deserve to be, very popular.

The best results are obtained by keeping the plants in an intermediate temperature. The soil should consist of two-thirds turfy loam and one-third leaf-soil; they do not require repotting often, but ought to be top-dressed and fed with liquid-manure. Many beautiful hybrids have been raised.

EPIPHYLLUMS.

like *Phyllocacti*, are epiphytes inhabiting the warm, moist forests of Brazil; they may be grown on their own roots, but do better when grafted on a *Pereskia*. A very pretty effect may be produced by grafting *E. truncatum* and *Cereus flagelliformis* on the same stock. Epiphyllums of various colours grafted on a *Pereskia* which has previously been trained up the roof of a greenhouse are very ornamental; they are also well fitted for hanging baskets. Care should be taken that the plants do not become dry, as they require more water than other Cacti; the supply ought to be diminished for a few weeks after flowering. *E. truncatum* flowers in winter, and *E. Russellianum* in spring.

There are many fine hybrids, which have been raised by crossing the two species mentioned with each other or with a *Phyllocactus*.

RHIPHALIS.

Whereas there are only two or three species of *Epiphyllum*, there are about fifty species of *Rhiphalsis*. Like the last two genera, they are of



FIG. 79.—*PILOCEREUS HOULETIANUS* VAR. *LEUCOCEPHALUS*.

epiphytal habit; some have flat stems resembling *Phyllocacti*, as, for instance, *R. pachyptera* and *R. Houletti*. This latter, I believe, would make a nice ornament if grafted on a stem of, say, 3 feet, as it is of pendulous habit, and studded with little cream-coloured flowers in autumn. In some kinds



FIG. 80.—*ECHINOPSIS MULTIPLEX* VAR. *CRISTATA*.

the stems are cylindrical, as for instance, *R. cassytha*. It is popularly known as Mistletoe Cactus, and a very appropriate name it is. Often have I found it most difficult to convince travellers in Africa that it was something different to our Mistletoe. *R. paradoxa*, which used to be known as *Lepismium Myosurus*, has triangular branches. All the species like a light, sandy soil, and are easily propagated by cuttings. *W. Brown*.

[The illustrations (figs. 79, 80) are from plants growing in the collection of Charles Darrah, Esq., Heaton Mersey. ED.]

HOME CORRESPONDENCE.

THE BRITON AND HIS COMMERCIAL RIVALS.—The bogey of "made in Germany," and the reiterated cry that British commerce is being worsted in every market of the world, lead me to ask for a little space in your columns to place before your readers one or two reasons why they need not give way to feelings of despair, or even despondency, over the situation. By the articles which are published from day to day in newspapers and magazines, our foreign trade is made to appear decadent, while that of Germany and America is shown to be as rapidly growing. "Give a dog a bad name, and hang him." Tell the whole world day by day that the Briton is a degenerate, and that his German and American rivals are cutting him out, and the prophets will bring about the fulfilment of their own forebodings; merchants and manufacturers will become discouraged, and capitalists will look abroad for more promising fields in which to invest, and then we may write "Ichabod" over the gateways of our custom-houses. A great number of writers take it for granted that Germans and Americans have made relatively far greater progress than Britons during the past twenty years—indeed, the opinion of some of the authorities in the symposium on this subject, held in a monthly review this month, clearly is, that Britain has lost its supremacy in the field of foreign commerce, and that it has fallen into a second or third place, behind Germany or America. I have seen enough of German and American factories and institutions to fill me with respect for them, yet I have felt no uneasiness concerning our own prospects. It may be all very well to attempt to spur on the British manufacturer to greater endeavour by warning him of what his rivals are doing, but exaggeration and, in many cases, false statements, are not justifiable. With your permission, I would like to lay the following broad statement of facts before your readers, so that they may draw their own conclusions from official data:—The annual gross exports of merchandise from the United Kingdom, Germany, and the U.S.A., as given in the Statistical Abstract of the Board of Trade, divided among the inhabitants of the respective countries, during the period from 1879 to 1899, split up into three equal terms of seven years:—

Periods.	United Kingdom: Total Exports per capita.	Germany: Total Exports per capita.	U.S.A.: Total Exports per capita.	Germany and U.S.A. combined: Total Exports per capita.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1879 to 1885 ...	8 4 1	4 17 5	3 2 2	7 19 7
1886 to 1892 ...	8 0 11	4 8 4	2 14 1	7 2 5
1893 to 1899 ...	7 9 0	3 12 2	2 18 9	6 10 11

The above decreases are due to the fall in value of late years; the actual volume of trade has, of course, greatly increased. Besides showing that the Briton is doing more, man for man, than his two great rivals combined, the above statement proves that he is increasing his lead. In the foregoing, the export business only has been taken into account, and moreover no credit has been claimed for the great preponderance of the British shipping and financial interests, in which this kingdom is *facile princeps*. *Geo. J. S. Broomhall, Royal Statistical Society's Rooms, 9, Adelphi Terrace, Strand, W. C., March 25.*

THE ELECTRIFICATION OF PLANTS.—With reference to "H. B. W.'s" enquiry on p. 191 in your last issue of the *Gardeners' Chronicle*, re the electrification of plants, the writer is not aware that experiments have previously been conducted on this subject beyond the rumoured application of a current of electricity to a crop of Potatoes, and it is probably a matter of doubt as to whether electrical influence would be of much benefit to plant life generally. However, assuming that "H. B. W." is on a "voyage of discovery," the following suggestions may be of use to him; firstly, as to the method of procedure to adopt to electrify plants in pots. Connect one terminal of the source of electricity by means of insulated copper-wire with the upper part of the stem of plant No. 1. Scrape the end of the wire to be attached to the plant, and remove the silk or cotton covering for about 6 inches. Bind the naked part to the stem

with bare copper wire to secure a good connection. Attach the bared end of another insulated wire to the root of the plant in such a manner as to secure a perfect contact, and pass this wire through the hole in the base of the pot to the stem of the next plant, and attach as before. Fix another wire to the roots of this plant, and connect to the other terminal of the source of electrical energy (supposing he is experimenting on two plants only). Stand the plants thus connected (in the pots, with mould, &c.), on a dry plate of glass to ensure insulation from the earth and surroundings. Regarding the plants in a border, the method of connection suggested for those in pots might be applied. Now as to the source of electrical energy: if "H. B. W." has a dynamo at his disposal, from which he can easily charge accumulators, these might be used with advantage; if not, for intermittent currents of about fifteen minutes duration, the bichromate form of cell is suggested; or for currents of a longer duration, the Bunsen cell. The number of cells required to produce any appreciable effect on the two plants previously mentioned, can best be ascertained by experience. To commence with, he might try a battery of four cells grouped in "series" (the writer never having tried the experiment is unable to state definitely). If "H. B. W." is not at all versed in electricity, or electrical matters, he should obtain a book on the subject, as some knowledge of circuits and connections, &c., is indispensable. If he already has such a knowledge, and also plenty of time and money at his disposal, the scope of his operations is unlimited. The effect of the induced currents of a Ruhmkorff or induction coil might be tried, also that of a battery of Leyden jars charged by a plate machine, used for generating frictional electricity; and dozens of other experiments which his knowledge of electrical matters will suggest to him. *J. Cecil Cocks, The Nurseries, Westerham, Kent.*

MARCH WEATHER IN NORTH WALES.—During the present month the weather in this part of North Wales has been extremely cold. We have experienced a continuance of E. and N.E. winds, accompanied by frequent heavy showers of hail and snow. The thermometer this morning (March 26) registered 10° of frost, or within 2° of the hardest frost during the winter. At the time of writing, the snow on the neighbouring mountains (the Cader range) appears to be several inches deep. Owing to our proximity to the sea (one mile) the snow does not lay long on the ground in our immediate vicinity, which is exemplified by the fact that during the past two winters we have scarcely had a covering of snow. *C. S., Ynys-y-Maengwyn, Towy.*

SWEET PEA SOCIETY?—Oh, yes; why not? and a Broccoli and Brussels Sprouts Society, if the fanciers of the Broccoli do not fall foul of the lovers of Sprouts, as is the usual custom in small societies. If this should happen, a new organisation, the Cabbage or Cauliflower Society, might be arranged for. An Onion Society, with which might or might not be combined an inter-imperial Leek Society, might be established. A Pumpkin and Potato Society would at least have the cohesiveness afforded by aliteration; so would the Celery and Cucumber Society, the National Sprouts and Spinach Association, or the Green Gooseberry Institute. But, in fact, every item in a catalogue might have its separate society, with its patrons, patronesses, presidents, vice-presidents, and councillors to afford compensation to those to whom the chances of obtaining the Victoria Medal or the Veitch Memorial are but slight. Whether the society will enable us to cultivate Sweet Peas any better than we could do without it, or whether it will help us to attain any additional knowledge that we could not gain without its aid, is very doubtful. *Tantulus.*

BLUE PRIMULA STELLATA.—The Blue Primula stellata grown by Mr. Kemp, of Stoke Park Gardens, and referred to on p. 175, originated from our Reading Blue Primula, of which we have a batch now seeding in our own houses, and hope to be able to supply seed next year. *Sutton & Sons.*

POTATO PLANTING.—My method in planting field Potatoes is to get the land well broken up with the grubber, then with a plough having double mould boards, strike out furrows at 30 inches apart, put the manure into these, having one row of heaps of manure laid down to every five furrows. The manure is first spread in each furrow, and the sets planted upon it, then with the same sort of plough

the ridges are split and the sets covered with soil, which completes the work. I have tried many and seen many different methods adopted in planting Potatoes in England and Scotland, and haven't found a better than the one here described, for it has the advantage of simplicity, and is very speedy. The heaviest crop of Potatoes I have ever grown were planted and treated as follows:—The land, a Wheat stubble, was afforded a dressing of about ten tons per acre of farmyard-manure in autumn, then ploughed deeply and left untouched till March, when it was again ploughed, the clods broken down with harrows, then furrowed with the double mould board plough, another dressing of farmyard-manure put on it and spread in the furrows. The Potatoes were then planted and the ridges split as described. For quantity and good quality this was the best I have ever grown, it exceeded twenty tons per acre. The varieties were Up-to-Date and Sutton's Windsor Castle, both being immensely heavy croppers and of the finest quality, with almost scarcely any disease, and nearly all fit for marketing. An important matter in the cultivation of Potatoes is, in my opinion, a change of seed every second year. I have grown fine specimens of Potatoes for exhibition from sets of varieties which had been grown in the same garden for many years; but then Potatoes that may seem to be everything that is good on the exhibition-table may not suit an employer's table—at least such is my experience. If I want the highest quality I use no artificial manure, but depend entirely on farmyard-manure. Under this regimen the crop may not be quite so heavy as with artificial manure, but I am quite convinced that the quality of the tubers when cooked is much better. With large growers for marketing early the case is different. *David Kemp, Stoke Park Gardens, Slough.*

MARKETING OF FRUIT.—The complaint of "Grape Grower," see p. 112, is not an uncommon one among growers for market. Having myself been engaged more or less in this line for well nigh upon thirty years, I experienced during part of that time treatment similar to that which your correspondent narrates. I am, however, thankful to say that during the last fifteen years, the difficulty of obtaining fair dealing has been got over, showing that there are some merchants with a conscience, and who are anxious to serve the producer and the public as well on fair terms. The fruiterer I deal with has a good business in a large city; he is energetic and careful, and is able to carry on his business with 15 per cent. profit, and all expenses paid. "Grape Grower" may possibly be in the position of having no choice of merchants, else he might perchance fall in with a fair-minded man with whom an understanding could be arrived at; he on his part stipulating to give a fair proportion of the retail value to the grower for good service and regular attention to orders. In this way, an amicable feeling of trust might be engendered, and which should pervade all our commercial transactions. Large grocers and the co-operative stores were mentioned as a source of opposition to the fruiterer, or as a means of controlling his extravagant percentage; unless, however, fruit in such establishments were made a specialty, successful action of this sort would be doubtful. In regard to co-operative stores, which have done much good throughout the country in reducing the price of provisions of various kinds to the consumer, I doubt much if the particular commodity in question would meet in them a ready sale. The members of these societies consist generally of working men and the lower middle class, who are content to purchase second or third-class produce, which I infer is not what your correspondent has for sale. Could not a number of growers in a district combine and start a fruit business, to be conducted by a committee of themselves? This, in my opinion, would safeguard the producer and the consumer alike, and prove a means of defeating the object of unscrupulous merchants and salesmen, or any combination of them, to secure enormous profits. The subject as suggested requires ventilation, and the manner of exacting large profits shown up in order to explain to the consumer where the money goes. *W. W., N.B.*

PUBLICATIONS RECEIVED.—*Journal of the Department of Agriculture of Western Australia*, January, 1907, vol. iii, part 1. This includes notes on: *Gastrolobium spinosum* as a Poison Plant, Disease of Passion Fruits, Bush Fires, and other crop and stock matters.

SOCIETIES.

ROYAL HORTICULTURAL.

March 26.—In spite of the very severe frost that occurred on Monday night last, there was a large display of plants and flowers at the fortnightly meeting of the committees of the Royal Horticultural Society in the Drill Hall, Buckingham Gate, Westminster, on the following day. The exhibitors of Orchids, in particular, incurred some risk in bringing their choice and tender plants into the exceedingly cold Drill Hall, and some had been brought so far as from Ghent, in Belgium. Two First-class Certificates and an Award of Merit were recommended to novelties, consisting of two varieties of *Odontoglossum crispum*, and a variety of *Laelia Jongheana*. Cultural Commendations were awarded by the ORCHID COMMITTEE in three instances.

THE FLORAL COMMITTEE had the most work to do, and its members attended in unusual force, as will be seen on reference to the list given below. An unusual exhibit before this Committee was a group of beautiful new and showy *Hemanthus*, from M. LINDEN, Brussels. Three of these were recommended awards—a First-class Certificate and two Awards of Merit. This Committee has hitherto abstained from the practice of recommending awards to plants already in almost every garden; but it showed a desire on Tuesday last to emulate the Fruit Committee, and conferred a First-class Certificate upon the handsome and well-known *Rhododendron R. grande*, after cultivation for half a century. Perhaps this is a result of the Council's recent instruction to the committees! Two Awards of Merit were recommended to varieties of *Hippeastrum* from Captain HOLFORD's magnificent collection, of which some notes are given below. Other novelties distinguished in like manner included a beautiful species of *Primula* from Miss WILLMOTT, a Tulipa from Messrs. WALLACE & Co., and two varieties of *Lachenalia* from Mr. F. W. MOORE, Glasnevin Botanic Gardens.

A beautiful group of hardy shrubs forced into flower was shown by Mr. J. RUSSELL, Richmond; a group of *Hyacinthus* from Messrs. CUTBUSH; and hardy plants, *Cinerarias*, *Cyclamens*, &c., from various sources.

THE FRUIT AND VEGETABLE COMMITTEE had little to do, and made no award, other than a Cultural Commendation.

THE NARCISSUS COMMITTEE held their second meeting of the season, but the extremely cold weather has prevented the plants in the open ground coming into flower.

A LECTURE upon "Inconspicuous and Rarely Cultivated Orchids," by Mr. W. H. WHITE, was read by the President of the Society, Sir TREVOR LAWRENCE.

Floral Committee.

Present: W. Marshall, Esq., Chairman; and Messrs. E. H. Krelage, H. B. May, H. S. Leonard, C. T. Drury, R. Dean, E. Molyneux, H. J. Jones, J. F. McLeod, Jas. Hudson, J. Jennings, W. Howe, Chas. Jeffries, C. R. Fielder, J. Fraser, Chas. Dixon, C. J. Salter, Chas. E. Shea, H. J. Cutbush, R. C. Notcutt, George Gordon, C. E. Pearson, W. Wilson Ker, W. P. Thomson, E. H. Jenkins, W. J. James, F. Page Roberts (Rev.), Harry Turner, and George Paul.

Godwinia gigas, or *Dracontium gigas*, that a few weeks ago was shown by the Director of the Royal Gardens, Kew, and was figured in the *Gardeners' Chronicle*, Feb. 23, p. 126, was now exhibited by FREDERICK SILSBURY, Esq., Clarendon Lodge, Shanklin, Isle of Wight, who staged a bloom only.

Two varieties of *Lachenalias*, Red Cap and Little Beauty, exhibiting distinct colouring, were shown by Messrs. BARR & SONS, King Street, Covent Garden, London, W.C. The plants were in pots, and probably they may be grown stronger than they were exhibited on this occasion.

Captain HOLFORD, of Westonbirt, Tetbury, Glos., fulfilled his promise made at the last meeting, and showed a magnificent collection of *Hippeastrums*, which formed the most conspicuous feature in the Hall, and occasioned most remark. The splendid cultivation afforded the plants was evident by the immense and stout flower-spikes, and had there been a little more sunshine recently, the colours and substance of the blooms would have been developed even more perfectly. Amongst the numerous varieties we noticed the following:—Snowflake, white, with little colouring, principally upon the upper segments; Hecla, intense but shining crimson; The Sultan, a variety of the same type; Lord Dalhousie, very large spreading showy flower, scarlet with white veins, scarcely so tall as some; Vesuvius, exceeding dark crimson; Cupid, white and coral-scarlet, marbled and mottled together, a very pretty variety; Mephistopheles, a much spreading flower of bright red, bloom flatter than some; Rosette, Pilot, Nectar, Mafeking, and Fascinator. There were upwards of one hundred varieties in Captain Holford's group (Silver-gilt Flora Medal).

Hyacinthus were well shown in pots by Messrs. W. CUTBUSH & SON, Highgate, London, N., and Barnet, Herts. There were nearly forty varieties shown, and each was represented by four plants (Silver Flora Medal).

Hepatica triloba rubra and *H. t. coerules* were shown most effectively by Messrs. CUTBUSH, in two very large pans. In two smaller pans were contained plants of *H. t. alba*, *H. t. coerules* fl.-pl. We do not remember to have seen a better show made of these pretty *Hepaticas* than Messrs. CUTBUSH exhibited on this occasion.

Messrs. ISAAC HOUSE & SON, Coombe Nurseries, Westbury-on-Trym, near Bristol, exhibited a collection of varieties of *Violets*. Some of the varieties are well known, as *Lady Hume Campbell*, *Marie Louise*, *Princess of Wales*, *La France*, *California*, *Amiral Avellan*, *Comte de Brazza* (double white), and *Luxonne*; there were also *Princesse de Sumonte*, a striped *Violet* (blue and white), *Madame Pages* (violet colour), *Sulphurea* (yellow), *Cannell's Blue and White*, *White Czar*, *St. Helena* (resembling the wild form) and *Bertha Barron*, double purple (Bronze Banksian Medal).

Messrs. J. PEED & SONS, Roupell Park Nurseries, West Norwood, showed a group of plants including forced "*Mollis*" *Azaleas*, *Lilies of the Valley*, *Staphylea colchica*, *White Lilac*, *Viburnum*, &c.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea, exhibited a large group of plants of *Cineraria* "*polyantha*," or hybrids from *C. cruenta*, and the garden *Cineraria*. The flowers possessed considerable variety of colour, but the plants were too dwarf, and the inflorescence less spreading than is desirable in such a strain (Silver Banksian Medal). *Arum palestinum*, one of the most richly coloured among Aroids, was also shown by Messrs. JAS. VEITCH & SONS.

Primula obconica, of which blooms were shown in glass vases by Messrs. H. CANNELL & SONS, Swanley, Kent, presented one of the prettiest pictures in the Hall. There was variation in colour from rich rosy-lilac to some that were nearly pure white, excepting a yellow eye. The size of all of the blooms was remarkable, and the exhibit well illustrated the pretty and distinct varieties that there are now of this well known, and (apart from its irritative properties) exceedingly useful plant. We believe there is a variety that produces double flowers (Silver Banksian Medal).

The ST. GEORGE'S NURSERY COMPANY, Hanwell, exhibited a glorious array of *Cyclamens*, in the form of a group that nearly furnished one-half of a long table. The flowers were remarkable for large size, substance, and bright distinct colours, in much variety. The scapes were long and stout, and the habit of the plants excellent. The exhibit included a batch of the crested or "*Papilio*" *Cyclamens*, composed of plants with normal leaves, and spreading fimbriated flowers, and plants in which the fimbriation was even more marked in the foliage than in the blooms (see fig. 70, in *Gardeners' Chronicle*, April 7, 1900). The cutting up of the margins of the leaves in some cases extended inwards nearly 1 inch. In this section there were white-flowering varieties, and others in various shades of pink and rose colour (Silver Flora Medal). *Cyclamen Carmine King*, shown by Mr. JOHN ODELL, Hillingdon, Uxbridge, was a very good plant, with fine flowers of that colour.

Messrs. R. WALLACE & CO., Kilnfield Gardens, Colchester, who always exhibit some choice hardy flowering plants, on this occasion included in their group a number of well-grown plants of *Lachenalia Nelsoni*, with large yellow blooms. It is one of the finest of the *Lachenalias*, and had a pretty effect interspersed amidst a few red-leaved Japanese Maples.

Amongst the hardy plants in flower were *Iris stylosa* and *I. s. speciosa*, of much deeper colour; *I. persica*, *I. sindjarensis*, *I. reticulata*, and others; *Fritillarias* included *F. pluriflora*, an interesting species, but rather poor in colour; *F. pudica*, figured in *Gardeners' Chronicle*, March 26, 1896, p. 403, and now shown in grand condition; *F. aurea*, a dwarf little gem, with large inflated yellow flowers, spotted on the inside with purple; *F. citrina*, with yellowish-green flowers; *Bulbocodium vernum*, *Hepatica triloba* varieties, *Narcissus pallidus* *præcox*, *Galanthus Whittallii*, *Chionodoxa gigantea*, *Scilla sibirica alba*, *Muscari azureum*, *Shortia galacifolia* (Silver Flora Medal).

A small group of *Roses* was shown by Messrs. PAUL & SON, The Old Nurseries, Cheshunt, that consisted chiefly of their new *H. T. Rose*, *Lady Battersea*, a variety already distinguished by an Award of Merit. The buds are of the fibert form, like those of *Niphetos*, only more so, and the colour cherry-crimson with a tinge of orange in it. The open bloom is full, of moderate size, and is stated to retain its shape for a long time. It is reputed to be an excellent variety for forcing and bedding, and its ordinary height is 2 feet. The variety has the valuable peculiarity from the florist's point of view of producing one flower on a shoot, and of possessing a long footstalk. Other varieties shown were *Catherine Mermet*, *Princess Beatrice*, *Safrano*, *Mrs. Grant*, a deep rose-coloured variety, with a fibert-shaped bud; and *Madame Berkeley*, a flower of the palest flesh-colour, like *Souvenir de la Malmaison*. Besides these were some panfuls of *Saxifrages*, *Aubrietia purpurea*, with gold-edge leaves, *Megaseas*, and a big plant of *Deutzia* \times *Lemoinei*.

Messrs. BARR & SONS, seedsmen and nurserymen, King Street, Cowent Garden, and Thames Ditton, showed a table of *Narcissus* and various bulbous and alpine plants. Of the

former we remarked among a miscellaneous collection *N. Mrs. Morland Crossfield*, a flower with a bright yellow trumpet and creamy-white perianth; the white and pale yellow *Mrs. Langtry*; *Ophir*, with a bright orange-red edged corona; *Duchess of Normandy*, a creamy-white bloom; *Bertie* (*N. incomparabilis* section), also a bright edged corona, and creamy-white perianth. Among the alpine and bulbous plants were several rare *Fritillarias*, *Crocus*, *Chionodoxas*, *Scillas*, *Bulbocodium vernum*, *Galanthus*, including *G. Ikariae*; *Iris reticulata*, and others (Silver Flora Medal).

Mr. JOHN RUSSELL, Richmond Nurseries, Richmond, exhibited an extensive semi-circular group by the door, which consisted principally of *Azalea mollis*, arranged as a foreground to the group, and having *Viburnum* in variety. *Rhododendron hybridum*, *Pyruses*, *Prunuses*, double-flowering *Cherries*, *Wistaria sinensis*, interspersed throughout, and comprising the background. The arrangement erred in lacking greenery as a setting to the flowers (Silver-gilt Flora Medal).

Mr. THOMAS WARE, Hale Farm Nurseries, Feltham, staged a large and interesting collection of alpine plants grown in pots, behind which was placed a row of *Narcissus* plants. We remarked *Iberis*, *Primula*, *Saxifraga*, *Draba lasiocarpa*, *Erythronium Den's canis var. Smithii*, a white Dogtooth *Violet*, several of the early dwarf *Irises*, and a *Fuschkinia*. Mr. Ware also showed a collection of *Violets* in pots, very useful for comparison, all of them being under name. A number of the old pink-coloured *Carnation Irma*, still one of the most prolific of winter bloomers (Silver Flora Medal to the group).

Mr. J. ODELL, Hillingdon, showed about thirty plants of *Carter's Perfection Cyclamen* of fine quality of bloom and compact crowns of leaves. Some of the plants showed amazing vigour, due either to strain or manual aids. The plants were samples of those the exhibitor grows for seed-saving purposes. The colours of the flowers were clear, decided, and distinct.

Messrs. B. S. WILLIAMS & SON, Victoria and Paradise Nurseries, Upper Holloway, London, N., exhibited a group of forced shrubs in flower, including good specimens of *Malus floribunda Scheideckeri*, varieties of *Lilacs*, "*Mollis*" *Azaleas*, *Spiraea media (confusa)*, a grand species; *Staphylea colchica*, &c. (Silver Banksian Medal).

Messrs. J. JACKMAN & SONS, Woking, Surrey, showed a group of hardy plants, inclusive of forced *Narcissus*, also *Fritillarias*, *Irises*, *Primulas*, &c. (Silver Banksian Medal).

A spray of *Asparagus Sprengeri* bearing its bright red fruits, was contributed by the Earl of JERSEY, Osterley Park Gardens, Isleworth, Middlesex (gr., Mr. Jas. Hawkes). This is one of the most useful species of *Asparagus*, and when in fruit is especially decorative.

Messrs. PAUL & SON, The Old Nurseries, Cheshunt, exhibited two plants in pots, of *Cytisus præcox alba*, each of them wreathed in pure white blossoms.

Awards.

Hemanthus fascinator (Linden).—This is a bright red-coloured species from the Belgian Congo, and produces a very large, showy umbel of flowers (First-class Certificate).

Hemanthus mirabilis (Linden).—A species possessing segments one-third of an inch wide, and rather short; colour orange-red. A very distinct species, introduced from the Congo (Award of Merit).

Hemanthus "Queen Alexandra" (Linden).—A loose umbel, with wide and short segments; colour flesh-pink (Award of Merit). All the above forms of *Hemanthus* were shown by M. LINDEN, Brussels, Belgium, who had also a fine group of new species and varieties.

Hippeastrum Clovillyi.—A finely-formed flower of considerable substance, white, with dull red markings upon the upper and lateral segments. Shown by Captain HOLFORD (Award of Merit).

Hippeastrum Lord Boringdon.—A variety with intense crimson flowers, an excellent type of this colour. From Captain HOLFORD (Award of Merit).

Lachenalia Kathleen Pauland Phyllis Paul.—These are two hybrid varieties presumably, raised by Mr. F. W. MOORE, Glasnevin Botanic Gardens, Dublin. Both have large handsome flowers, and the former has considerable red colour, especially upon the unopened buds. The latter variety is nearly all rich yellow. From Mr. MOORE, Glasnevin (Awards of Merit).

Primula megaseaefolia.—A new species of *Primula* from Asia Minor, shown by Miss WILLMOTT. The flowers are rosy lilac colour, nearly 1 inch across, mostly with six petals borne on stems some 5 inches high, about seven in a truss. Leaves 1½ inch long and as wide. Described by BOISSIER in *Flora Orientalis*, iv., 26 (Award of Merit).

Rhododendron grande.—One of the most magnificent of the Sikkim *Rhododendrons*; flowers pure white, with purple spots at the base, 2½ inches or more in diameter, and twenty-five to thirty in a truss. Figured in *Bot. Mag.*, t. 5054; and much more adequately in *Gardeners' Chronicle*, June 10, 1882 (supplement), from a specimen grown by the late Captain

MANGLES, Valewood, Haslemere. The specimens shown on Tuesday last were from F. D. GODMAN, Esq., South Lodge, Horsham (gr., Mr. Moody). The species was introduced in 1850, and after fifty years "trial" has been recommended a First-class Certificate.

Tulipa Korotkowi bicolor.—A bright little early Tulip; flowers yellow, with interior base bright red, this colour showing outside in the centre of petals; about 5 inches high, of slender growth. From Messrs. WALLACE & CO., Kilnfield, Colchester (Award of Merit).

Orchid Committee.

Present: Harry J. Veitch, Esq., in the Chair; and Messrs. Jas. O'Brien (Hon. Sec.), de B. Crawshaw, R. Broomn-White, H. M. Pollett, J. Douglas, E. Hill, T. Rochford, H. Ballantine, H. Little, W. Cobb, F. A. Rehder, H. J. Chapman, W. H. Young, F. J. Thorne, J. W. Odell, H. T. Pitt, and Jules Hye Lebrun.

There was a good representative display of Orchids, the botanical interest being represented by a collection of twenty-seven rare and curious species shown by Sir TREVOR LAWRENCE, Bart (gr., Mr. W. H. White). A list of these is given in another column.

Messrs. JAS. VEITCH & SONS, staged an excellent group for which an award of a Silver Flora Medal was made. In the centre there were arranged eight good examples of their fine *Lælio-Cattleya* \times *Pallas*. With them were *L.-C. x Highburyensis*, "*Veitch's var.*," larger and darker than the original; *L.-C. x Myra*, the large-flowered *L.-C. x Antimachus*, *Dendrobium x Wardian-japonicum* and its white variety; a fine *D. x Aspasia*, *D. x Virginia*, *D. x Sosius*, *D. barbatulum*, *D. x eucosmum splendendum*, a fine set of *Epidendrum x Clarissa*, *Cymbidium x eburneo-Lowianum*, *Chysis x Sedeni*, and fine plants of *Dendrobium Wardianum*, *Oncidium sarcodes*, &c.

Messrs. HUGH LOW & CO., Bush Hill Park Nurseries, were awarded a Silver Banksian Medal for an effective group, consisting of varieties of *Cattleya Trianae*, including two white forms and the large, richly-coloured *C. Trianae tricolor*; other plants being *Cypripedium Rothschildianum*, *Dendrobium nobile virginale*, *D. Brymerianum*, *D. crassinode*, *D. c. album*, *D. primum*, *D. fimbriatum oculatum*, *Cattleya Schroderae*, *Lælia Jongheana*, and other showy species.

Messrs. F. SANDER & CO. showed a small group of their hybrid *Phaius*, between *P. x Marthe* and *P. Sanderianus*, very fine; some hybrid *Odontoglossums*, including the fine yellow *O. crispum Sunrise* (see awards), a grand *O. x excellens*, in colour resembling *O. triumphans*; several other finely spotted hybrids, and a good example of *Dendrobium x Euterpe* (*Wardianum x nobile*).

J. BRADSHAW, Esq., The Grange, Southgate (gr., Mr. Whitelegge), showed *Cattleya Trianae* *Empress of India*, a fine white variety, with rosy-lilac front to the lip; and *C. T. Mafeking*, of the C. T. Backhousiana section, possessing very richly coloured flowers.

Sir JAS. MILLER, Manderston, Duns (gr., Mr. J. Hamilton), sent two fine spikes of *Lælio-Cattleya x Highburyensis*.

Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen (gr., Mr. W. H. Young), showed a fine flower of the rose-tinted, fringe-lipped *Lælio-Cattleya x Digbyano-Trianae*, and of *L.-C. x Louis Chaton Cecilia*.

DREWETT O. DREWETT, Esq., Riding Mill-on-Tyne, exhibited *Cypripedium x Juno*, and *C. x Robert Etty* (*Godefroyæ x insignis*) *Chantini*, a pretty and distinct yellowish flower, profusely spotted with purple.

Mr. A. J. KEELING, Cottingley, Bingley, showed *Lælia Jongheana* and *L. Jongheana Keelingiæ*—the latter a dark-coloured flower, with purple band round the lip.

R. I. MEASURES, Esq., Ladymead, Sussex (gr., Mr. Wotton), sent *Cypripedium x Zeus*.

Mr. JULES HYE LEBRUN (gr., Mr. Coen) showed the yellow *Lælio-Cattleya x Myra* "*Etoile d'Or*," for which an award had been previously made him.

M. LUCIEN LINDEN, l'Herminette Coloniale, Brussels, sent two good forms of *Phalenopsis amabilis* (*grandiflora*).

Dr. F. FRITZCHARD, Maidstone (gr., Mr. Keylock), showed a white flowered variety of *Odontoglossum ramosissimum*, having purple markings at the base of the segments, which were not spotted.

WALTER COBB, Esq., Tunbridge Wells (gr., Mr. J. Howes), showed the large rich-coloured *Odontoglossum triumphans Dulcoteense*, and *O. crispum Elamii*, a well shaped flower with large red-brown blotches.

Mrs. HAYWOOD, Woodhatch Lodge, Reigate (gr., Mr. C. J. Salter), sent *Dendrobium x splendissimum* "*Mrs. Haywood*," a large, finely coloured flower; and *C. x Virgil*, white, with rose tips to the petals, and dark centre.

Mr. JOHN WEATHERS, Silverhall Nursery, Isleworth, showed *Odontoglossum crispum* var. "*Bella*," a neat, white flower, with an occasional small spot on the lip.

A. H. SNEE, Esq., The Grange, Carshalton (gr., Mr. Humphreys), showed *Lælio-Cattleya x Pallas* (*L. crispæ x C. aurea*), showing difference in colours of the flowers, one of which showed much of the yellow in the lip as in *C. aurea*.

H. M. POLLETT, Esq., Bickley (gr., Mr. Fry), sent *Dendrobium Wardianum grandiflorum*.

AWARDS.

Silver-gilt Flora Medal to M. JULES HYE-LOUREN, Ghent (gr., Mr. Coen), for *Odontoglossum crispum* "Franz Masereel," the grandly spotted variety which has acquired a world-wide reputation. The noble plant bore a spike furnished with thirteen fine flowers, the greater part of whose surface was occupied by crimson-purple blotches of various sizes, the lip and margins of the segments showing a little white, tinged with lilac. It has been in cultivation for some time, but has greatly improved in M. Jules Hye's hands.

FIRST-CLASS CERTIFICATE.

To *Odontoglossum crispum purpurascens*, from Sir Trevor LAWRENCE, Bart. (gr., Mr. W. H. White). This grand *Odontoglossum* had previously received an Award of Merit, and the fine spike, regarded from the point of beauty as well as cultural skill in its production, was the equal of O. c. Franz Masereel, though very different in colour. The flowers were large and of fine form, the sepals slightly and the petals heavily fringed, and the colour rosy-lilac, changing to white in places, and the inner portions heavily tinged with purple. The sepals were thickly marked with small, confluent, reddish-purple spots, and the centre and base of the petals with a few number of blotches; the lip white, with a yellow crest and some red-brown spots.

AWARD OF MERIT.

Odontoglossum crispum "Sunshine," from Messrs. F. SANDER & Co.—A fine yellow form of the best and largest type of O. crispum. The sepals showed a purplish tinge at the back, and the lip a large red brown blotch. The yellow form is very rare among O. crispum, and this one was a fine example of it.

Laelio-Jungheana Kromeri, from Mr. ED. KROMER, Croydon.—The richest in colour which has yet appeared, and of fine size and shape; sepals and petals of a bright rose-purple; lip heavily banded with purple.

CULTURAL COMMENDATIONS.

To Mr. Geo. Day, gr. to H. F. SIMONDS, Esq., Beckenham, for four magnificent plants of *Dendrobium Jamesianum*, bearing upwards of 150 flowers.

To Mr. W. Stevens, gr. to W. THOMPSON, Esq., for the finely-spotted *Odontoglossum crispum* Victoria Regina, which had previously received a first-class Certificate.

To Mr. Humphreys, gr. to A. H. SWEET, Esq., for *Scuticaria Hadwenii*, with six fine flowers.

Fruit and Vegetable Committee.

Present: George Bunyard, Esq., Chairman; and Messrs. H. Esling, Jos. Chal, W. Bates, S. Mortimer, A. Dean, George Kelf, Chas. Herrin, Jas. H. Veitch, W. Fyfe, E. Beckett, G. Reynolds, A. Ward, Geo. Wythes, G. Norman, J. Willard, W. Farr, W. Wilks, and H. Balderson.

The excellent dessert Pear Easter Beurre was capitally shown by the Earl of ILMESTER, Holland House, Kensington (gr., Mr. G. Dixon) (Cultural Commendation).

There were several varieties of Apples before the Committee, but no award was recommended them.

Inconspicuous and Rarely-cultivated Orchids.

In the afternoon a paper upon the above subject, prepared by Mr. W. H. White, Orchid-grower to Sir Trevor Lawrence, Burford, Dorking, was read by the President himself. The object of the paper was to call attention to numerous Orchids whose flowers, though individually small, were, in point of beauty, fully equal to the larger and more flaunting species. This beauty might readily be seen by the use of a pocket-lens of low magnifying power. The construction and mechanism of these flowers are indeed among the marvels of the vegetable kingdom, and Mr. White gave several instances of the sensitiveness to touch and other agencies, and to the movements which occurred in consequence, which are quite analogous to what occur in the animal kingdom. Some of these phenomena obviously have relation to the fertilisation of the flower by insect agency, but in other cases, the reason for the movements observed is not yet apparent. Many cultural details were given appropriate to the species of *Cirrhopetalum*, *Bulbophyllum*, *Megaciliium*, and others. Allusion was also made to the collectors, by whose zeal and enterprise so many fine species had been introduced, the lecturer especially commenting on the labours of Consul Lehmann.

In conclusion, he hoped that cultivators would give to the smaller Orchids "some little care, some little attention, and some little consideration."

Among the specimens exhibited in illustration of Mr. White's lecture were *Pleurothallis Rozei*, *P. ornata*, *P. macroblepharis*, the rare *Cymbidium lancifolium*, the singular feather-lipped *Bulbophyllum tremulum*, *Cirrhopetalum picturatum*, *Celoglyne Mossii*, *C. sparsa*, *Epidendrum Claesia-*

num, *Masdevallia pulvinaris*, *M. sororula*, *Saccolabium ampullaceum*, *Vanda coarulescens*, *Canaridium Lawrenceanum*, *Dendrobium subclausum*, *D. Kingianum*, *D. speciosum*, *Kingianum*, &c.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

MARCH 7.—There was a very fine display of Orchids on this date, *Dendrobiums* being shown in great variety.

Excellent groups were shown by J. LEEMANN, Esq. (Silver-gilt Medal), O. O. WRIGLEY, Esq. (Silver Medal), and J. CYPHER (Silver-gilt Medal), while many other amateurs and trade growers contributed to the success of the meeting.

The following awards were made:—

FIRST-CLASS CERTIFICATES.

Cattleya Trianae alba var. Snowflake, to R. Ashworth, Esq. *Dendrobium* × *splendissimum* var. giganteum, to Mr. J. Cypher.

Dendrobium Wardianum var. ochroleucum (confirmed), to O. O. Wrigley, Esq.

Cymbidium eburneo-Lowii (confirmed) to W. Duckworth, Esq.

Dendrobium × *Schneiderianum* (confirmed), to E. O. Schneider, Esq.

Dendrobium × *Cybele* var. "Mr. John Cypher," to S. Gratix, Esq.

Laelio-Cattleya × *Admiral Dewey*, to J. Leemann, Esq. *Cypripedium* × *aureum* var. *Cyros*, to Mr. J. Robson.

AWARDS OF MERIT.

Dendrobium × *Cybele* var. *nobilis*, to Mr. W. Holmes. *Cypripedium* × *aureum* var. *Etiocle*, to Mr. A. A. Peeters.

Cypripedium × *aureum* var. *Capartianum*, to Mr. J. Robson.

Dendrobium × *minos* (*Findlayianum* × *Cassiope*), and *Laelio-Cattleya* × *Cappai*, to T. Statter, Esq.

Dendrobium nobile var. *Duckworthi* to W. Duckworth, Esq. *D. × splendissimum* var. *albans* and *Saccolabium bellinum* to Mr. J. Cypher.

Odontoglossum Rossi giganteum to G. H. Peace, Esq. *Cattleya Trianae* Lees' var. to A. Z. Lees, Esq.

Dendrobium hybrid (*D. nobile Amesiae* × *D. endocharis*) to Mr. J. Robson.

MARCH 21.—There was an excellent display of plants at the meeting held on the above date, fine showy groups being staged by Messrs. O. O. WRIGLEY, J. LEEMANN, W. DUCKWORTH, CHARLESWORTH & Co., and J. CYPHER, Silver-gilt Medals were awarded to the exhibitors of the first four groups, and a Silver Medal to the last-named.

FIRST CLASS CERTIFICATES.

Odontoglossum crispum Imperator, a finely spotted variety, with compact round flowers—J. LEEMANN, Esq., Heaton Mersey.

Laelio-Cattleya × *Ernsti* var. "General Butler," a fine hybrid of *L. flava* × *Cattleya Percivaliana*, the lip showing the rich dark blotch of the latter parent prominently, while the sepals and petals are of a rich orange-yellow—J. LEEMANN, Esq.

Cypripedium × *Maudiae*, previously Certificated and noted in these columns—T. STATTER, Esq.

Odontoglossum × *Roseae* var. *Hercules*, a form of fine size and beautiful colouring—Mrs. BRIGGS-BURY.

Cattleya Trianae alba—Messrs. HUGH LOW & Co.

Lycaste × *Samuel Gratix*, a very beautiful hybrid, closely resembling *L. Skinneri* in shape, the segments of the flower being of a rich reddish-brown, and having a glazed appearance, the lip being lighter in colour—S. GRATIX, Esq.

Cattleya Schroderae Queen Alexandra, one of the finest albino forms—E. H. SEDDON, Esq.

Dendrobium × *rubens* var. *grandiflora*—O. O. WRIGLEY, Esq.

Odontoglossum Adrienne var. "Duchess of Cornwall," a very choice and distinct form; the groundwork of the flower is yellow, spotted heavily with dark brown, flowers of good size and substance—Messrs. CHARLESWORTH & Co.

O. crispum var. "Sunray," a good type of spotted crispum—Messrs. CHARLESWORTH & Co.

Cymbidium × *eburneo-Lowianum* concolor. This is a hybrid from the green or yellow variety of *C. Lowianum* and *eburneo*; it differs from the ordinary "eburneo-Lowianum" in having almost a self-coloured flower, there being only the faintest suspicion of a trace of colour in the lip, a great acquisition—Messrs. CHARLESWORTH & Co.

Cypripedium × *Lilian Greenwood*, previously certificated, and described in these columns—W. DUCKWORTH, Esq.

Dendrobium × *Souvenir de Queen Victoria*, a very beautiful hybrid between *D. nobile Amesiae* × *D. Ashworthianum*; the flower is of a fine shape, and prettily coloured—A. WARBURTON, Esq.

Cypripedium × *Juno* (callosum × *Fairieanum*), a brilliant little thing, which has been in collections now for a number of years, but still holds its own as a hybrid—Mr. A. J. KEELING.

AWARDS OF MERIT.

Odontoglossum Ruckerianum var., J. Leemann, Esq. *Odontoglossum*, natural hybrid, J. Leemann, Esq.

Dendrobium × *Ainsworthi*, Woodhatch var., J. Leemann, Esq.

Cypripedium × (*Golefroyae* × *insigne*?), J. Leemann, Esq. *Dendrobium* × *Curtisii*, T. Statter, Esq. *Dendrobium nobile* var. *Duckworthae*, Mr. J. Cypher. *Odontoglossum triumphans*, Bank House var., Mrs. Briggs-Bury.

Odontoglossum crispum var. *Princess*, Mrs. Briggs-Bury. *Trichopilia suavis* var. *grandiflora*, Mrs. Briggs-Bury. *Cypripedium* × *aureum* var. *Edipe*, Mrs. Briggs-Bury. *Cypripedium* × *Pomona*, Mrs. Briggs-Bury. *Dendrobium* × *Sibyl* var. *magnifica*, Dr. Hodgkinson. *Dendrobium Rolfeae*, O. O. Wrigley, Esq. *Laelio-Cattleya* × *Mrs. Gratix*, Messrs. Charlesworth. *Cattleya Trianae*, Uplands var., W. Duckworth, Esq. *Cypripedium* × *Robt. Etty*, Mr. A. J. Keeling. *Odontoglossum crispum* var. *virginale*, Mr. A. J. Keeling.

VOTES OF THANKS.

Mrs. Briggs-Bury, Messrs. F. Sander & Co., and Mr. A. J. Keeling, for groups. P. H.

CROYDON AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT.

MARCH 19.—The usual fortnightly meeting was held in the Society's room at the "Sunflower" Temperance Hotel on the above date. Mr. W. J. SIMPSON occupied the chair.

The evening was devoted to questions and discussions, and proved both profitable and interesting. The subjects discussed were "The Shanking of Grapes," and "Fixed versus Movable Shading."

There was a beautiful display of Orchids: Mr. M. E. Milla, gr. to FRANK LLOYD, Esq., Coombe House, Croydon, exhibited a fine plant of *Cattleya Trianae*, carrying seventeen flowers; also one of *Cypripedium Rothschildianum*. Mr. W. J. SIMPSON, gr. to C. H. WALKER, Esq., Falkland Park, S. Norwood, brought six well-flowered plants of *Dendrobium Ainsworthi*.

To Mr. MILLS and Mr. SIMPSON the thanks of the Society were awarded for the excellent exhibits.

WARGRAVE GARDENERS.

MARCH 20.—Mr. T. HASKETT, gr. to J. W. RHODES, Esq., Hennerton House, read a very practical paper on "Cucumber and Melon Culture." The following points were taken—Seed-sowing, soil, temperature, airing, syringing, training, and shading. The chief enemies were mentioned, and means for exterminating them given. The exhibits included a fine group of Callas, Violets, and specimen Azaleas, H. C.

TORQUAY DISTRICT GARDENERS.

MARCH 20.—The spring show was held in the Bath Saloons during very wet weather. The floral display was really good, and included Primulas, Cinerarias, Deutzias, Freesias, Mignonette, and Hyacinths.

Class I. was for six flowering plants in pots. Dr. FORD EDGELOW took 1st, Mrs. HASSALL 2nd. The better exhibit was disqualified in having two *Dendrobiums*, the class being for six distinct species. [There should have been no disqualification. Ed.] Mrs. HASSALL had the best collection of six foliage plants, Ferns excluded; and Miss LAVERS was 1st for three foliage plants, and for six distinct Ferns. Mrs. HASSALL showed the best Azaleas in several classes.

There was only one exhibitor of a circular group of plants. This was from Dr. EDGELOW, and contained *Lilium Harrisii*, *Mignonette*, *Dendrobiums*, Azaleas, Crotons, &c. Miss LAVERS was the only exhibitor of a group of Orchids with foliage plants. Especially good in this group were *Celoglynes*, *Dendrobium Wardianum*, and *D. Ainsworthi*. Miss LAVERS also took 1st prizes for three Orchids, and for three double-flowered Primulas. Mr. KIMBER had the best collection of twelve distinct Hyacinths. There were good Freesias, Lily of the Valley, Tulips, Cinerarias, and Mignonette.

The epergnes table decorations, button-holes, and sprays, were very meritorious; while several nurserymen staged choice collections of flowering and foliage plants, notably CURTIS, SANDFORD & Co., who had cut Roses in variety; J. HEATH had Violets in abundance; Messrs. R. VEITCH & Son, Exeter, showed *Amaryllis*, *Richardias*, *Magnolia stellata*, *Staphylea colchica*, *Narcissus*, &c.; Messrs. ALLWARD had a showy group of Azaleas, *Gloxinias*, *Cyclamens*, *Lilies*, white *Lilac*, &c.; B. SMALE staged a similar group. J. M.

NATIONAL SWEET PEA.

MARCH 26.—The initial steps in the formation of a Sweet Pea Society have been taken. As announced in the last issue of the *Gardeners' Chronicle*, a public meeting was called for the above date at the Hotel Windsor, Westminster. Mr. GEO. GORDON, V.M.H., presided on that occasion. He said that the Bicentenary Celebration Committee had held a show of Sweet Peas and a Conference in 1900, and these were more successful than any horticultural event he had been associated with during, say, the last twenty years. That committee had presented a recommendation to the present meeting, "That a National Sweet Pea Society be at once formed." He invited the meeting to discuss the matter.

Mr. N. N. SHERWOOD formally moved that the meeting adopt the resolution quoted above, and after it had been

seconded by Mr. H. J. JONES, an unanimous vote in the affirmative was taken without discussion.

On the proposition of Mr. W. P. WRIGHT, the following gentlemen were appointed a general committee, with power to add to their number:—George Gordon, E. Beckett, H. J. Jones, N. N. Sherwood, S. B. Dicks, C. H. Curtis, H. J. Catbush, R. Lewis Castle, J. F. McLeod, R. Sydenham, H. Eckford, R. P. Ker, E. Molyneux, —Laxton, R. Cannell, and W. P. Wright.

On the proposition of Mr. H. J. WRIGHT, Mr. Geo. Gordon, V.M.H., was elected chairman; and on the proposition of Mr. H. J. JONES, Mr. Richard Dean was elected secretary, Mr. Dean wishing for personal reasons to be known as secretary *pro tem*. Mr. N. N. Sherwood, on the motion of Mr. LAXTON, was elected treasurer.

Mr. H. J. JONES proposed that the minimum annual subscription to the Society should be 5s., and this was accepted. The Chairman then read a letter from Mr. Percy Waterer, who complained that the deputation from the City meeting had not received the consideration it had been expected the Bicentenary Celebration Committee would have accorded it. The meeting then terminated, and a meeting of the general committee followed to appoint an executive committee to prepare the necessary rules, nominate vice-presidents, and draw up a draft schedule of prizes to be offered at an exhibition to be held during the coming summer, &c.

In all, there were about thirty persons present, all of whom will probably become members.

POMOLOGICAL SOCIETY, BOSKOOP.

THE Floral Committee of the above-named Society has awarded a First-class Certificate to the new Lilac "C. B. Van Nes." The firm, C. B. VAN NES & SONS, who are the originators, say that it was selected from a lot of Rouge de Marly in their nurseries. It is a reddish-purple Lilac, resembling somewhat Souvenir de Louis Spith. When the plant is forced the colour of the flowers resemble that of the flowers of Charles X., but the spikes and individual flowers are larger. A few of the plants staged, that were potted last summer in full growth were well set with flowers. *B. de Bruin*, Chief Secretary.

THE APIARY.

MOVING BEES.

HIVES that are too near the road should be moved now, and a better place found for them. If only a short distance, move them a foot or two at a time. The colder the weather the better. There have been several cases where bee-keepers have been summoned in the county-court for damages, either to persons or to animals, and the cases have been decided against them. This is a serious matter to poor bee-keepers.

CRATES FOR USE.

All empty crates should be got together, and well scraped and washed in strong soda and water, ready for use; and even if clean, no harm is done by giving them a good scrub; it will kill all eggs of the wax-moth, or other insects in the crate. Sections can be dealt with later.

SPRING.

All hives should now be properly over-hauled on the first fine day, but done as carefully as possible; everything should be ready to hand, so that when a start is made it can be done without running here and there for different articles required. Do not attempt to touch the hives unless you think you can finish them, and the weather also must be a little more certain than that which we are now having. Any little mistake made now will often cause the stock to do badly, and on the contrary, proper attention afforded in the right manner will help to ensure a good return. Firstly, then, if you find your stocks running short of stores, give candy-cake forthwith, placing it on the tops of the bars; but no liquid food should be supplied until the weather gets warmer, and then only to stimulate, and cause breeding at a slow rate. If afforded freely, there is great danger of the bees at once commencing to build drone cells, and so lay the foundation for swarming instead of making honey; and at this part of the season it behoves every bee-keeper to think to himself which it will pay him best to do (if he is bee-keeping for profit)—to sell his swarms or his honey. If the former, let the bees swarm, and increase the apiary or sell the bees; but if he

has made up his mind that the bees that produce honey for profit, several things must be considered. Firstly, whether it shall be run or section honey; for it is absurd to produce run honey if there is no market for it, and the same applies to that made in sections. If swarms are wanted, then do not allow the bees to have much room, but afford them a small quantity of syrup, and confine them to about ten frames in which to work and breed; on the other hand, if for section or run honey, swarms must be returned at once, first taking away the queen, or catching her as she runs in; or if inexperienced, allow them to fight out their own battle. *Expert.*



METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period March 17 to March 23, 1901. Height above sea-level 24 feet.

1901. MARCH 17 TO MARCH 23.	DIRECTION OF WIND.	TEMPERATURE OF THE AIR.				TEMPERATURE OF THE SOIL AT 9 A.M.			
		At 9 A.M.		DAY.		At 1-foot deep.		At 3-feet deep.	
		Dry Bulb.	Wet Bulb.	Highest.	Lowest.	At 1-foot deep.	At 3-feet deep.	At 4-feet deep.	LOWEST TEMPERATURE ON GRASS.
		Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.
SUN. 17	E.N.E.	42.2	39.1	47.6	33.8	...	41.6	42.8	44.2
MON. 18	E.N.E.	39.7	37.7	41.6	39.4	...	41.2	43.0	44.2
TUES. 19	E.N.E.	38.7	34.6	41.6	35.3	0.27	41.2	42.9	44.2
WED. 20	E.N.E.	38.6	37.2	41.3	34.6	0.12	41.2	42.9	44.2
THU. 21	E.N.E.	39.2	35.1	43.1	36.7	...	40.5	42.5	44.2
FRI. 22	E.N.E.	38.0	33.8	43.3	31.5	...	39.8	42.3	44.2
SAT. 23	E.N.E.	39.7	37.2	42.4	36.1	...	40.2	42.1	44.2
MEANS...	...	39.4	36.4	43.0	35.3	0.39	40.8	42.6	44.2

Remarks.—Dull weather has prevailed during the past week, with very cold strong winds. Rain, mixed with snow, sleet, and hail fell on the 19th and 20th inst.

GENERAL OBSERVATIONS.

The following summary record of the weather throughout the British Islands, for the week ending March 23, is furnished from the Meteorological Office:—

"The weather was cold and wintry in all parts of the kingdom. Sleet and hail showers were prevalent in the north and north-east during the earlier days of the week, and considerable quantities of rain or snow were experienced over eastern and southern England on the 19th or 20th. With these exceptions, the weather was mostly dry, with a good deal of sunshine in Ireland and the west and north of Scotland.

"The temperature was below the mean, the deficit ranging from 1° in Scotland, N. and E., to 4° in nearly all parts of England, and to 5° in the Channel Islands. The highest of the maxima were registered on rather irregular dates, and ranged from 54° in Ireland, N., and 53° in Scotland, E., to 47° in England, E., and N.W. The lowest of the minima, which were recorded towards the end of the week, ranged from 23° in Scotland, N., and Ireland, N., to 26° in Scotland, E., and England, S., and to 33° in the Channel Islands.

"The rainfall was twice as much as the mean in the Channel Islands, and slightly exceeded it in England, S., while in England, E., the Midland Counties, and England, S.W., the fall was just equal to the normal. In all other parts of the kingdom there was a deficit; over Ireland and the north-west of Great Britain, the weather was almost entirely rainless.

"The bright sunshine was in excess over Ireland and the extreme northern and north-western parts of Great Britain, but very deficient elsewhere. The percentage of the possible duration ranged from 46 to 42 in Ireland, from 40 to 16 in Scotland, and from 33 to 13 in England. In the Channel Islands the percentage was as low as 8."

THE WEATHER IN WEST HERTS.

The present term of cold weather has now lasted nearly three weeks, during which time there has been only one un-

seasonably warm day, and but few warm nights. During the nights of the 10th and 25th the thermometer exposed on the lawns showed respectively 13° and 12° of frost. At 2 feet deep the ground is now about 1° colder, and at 1 foot deep about 4° colder, than is reasonable. On the 19th snow fell nearly all day, but melted on reaching the ground. Had none melted, it would have covered the ground to the depth of about 2 in. There was a further fall of snow, succeeded by rain, during the following night, so that the total measurement of rain and melted snow for the 24 hours amounted to about half an inch—equivalent to 2½ g. lons on each square yard of surface in my garden. Brief showers of snow and soft hail occurred on two other days. About 2 gallons of rain-water came through the bare soil percolation gauge during the week, and about 1½ gallons through that covered with short grass. The sun shone on an average for two hours a day, which, although a better record than for some weeks, is nevertheless only about half the average amount for the time of year. The air was also somewhat drier than of late. For 142 hours the wind came from some point between north and east. An Early Rivers Peach, growing on a south wall in my garden, came first into blossom on the 26th, which is two days later than its average date for the previous fifteen years, but four days earlier than last year. *E. M., Berhamsted, March 26, 1901.*

MARKETS.

COVENT GARDEN, MARCH 28.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but often several times in one day. *Ed.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, English, per bushel—	...	Lemons, case	8 0-15 0
cookers, large	4 0-5 0	Lychees, new, pkt.	0 10 —
various	2 0-4 6	Oranges, Navel	13 0-18 0
— Nova Scotia, per barrel	1 0-17 0	— Bitter, case	9 0-10 0
— Californian, per box	7 6-9 6	— Blood	8 0-10 0
— Wellingtons	4 0-8 0	— Murcia, case	7 6-9 0
Bananas, bunch	6 0-10 0	— Tangierine, box of 96	1 9-2 9
— loose, per doz.	1 0-1 6	— Valencia	14 0 —
Johnnys, lb.	0 6 —	Pears, French stewing, crates	7 6 —
Crabberries, case	16 0 —	— Californian Easter Beurre, half cases	16 0 —
Grapes, Alicante, lb.	2 0-3 0	Pines, each	2 0-4 0
— Colmar, A, lb.	2 6-3 0	Sapucaia nuts, per lb.	1 0 —
— Colmar, B, lb.	1 0-2 0	Strawberries, per lb.	4 0-8 0
— Alameda, doz. lb.	6 0-8 0		
— Belgian, per lb.	0 0-1 10		

VEGETABLES.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe, per doz.	3 6 —	Leeks, per dozen bunches	1 0-1 6
— Jerusalem, sieve	0 9-1 0	Lettuces, French	...
Asparagus, Spruce	0 9 —	Cabbage, doz.	0 10 1 2
— Paris Green, bun.	5 8 —	Mint, per dozen bunches, new	3 0-6 0
— home - grown, per bundle	7 0-9 6	Mushrooms, house, per lb.	0 10-1 0
— Spanish, bundle	2 4 —	Onions, picklers, per sieve	2 0-3 0
Beans, dwf. Madeira, per bkt.	3 0-5 0	— per bag	2 0-3 0
— Ch. Islds. and home, dwf., new, per lb.	1 6 2 0	— cases	8 0-9 0
— French, dwf., packets	1 0 —	— English, p. cwt. bag	4 6-5 3
— Broad, in flats	4 0 —	Parsley, 12 bunches	1 0-2 0
Barbe de Capucine	0 5 —	— per sieve	0 9-1 0
Beetroot, bushel	1 1 1 6	Parsnips, per cwt. bag	1 6-2 0
Beet, per dozen	0 6 —	Potatoes, per ton	85 0 125 0
Broccoli Sprouts, bushel	0 0 1 0	— New, per cwt.	10 0-14 0
Brussel Sprouts, per sieve	1 0-1 6	— New French, lb.	0 2 0 2 1
Cabbage, tally	5 0 —	— New Frame, Channel Islds., per lb.	0 5-0 6
— dozen	1 0 —	Radishes, per 12 bunches	1 0 —
Carrots, 12 bunches	1 6-2 6	Rhubarb, Yorks, per dozen bundles	1 6-2 0
— washed, in cwt. bags	2 0-2 6	Salad, small, punnets, per dozen	1 3 —
Cauliflowers, p. doz.	1 0-1 6	Savoy, per tally	3 6-6 0
— crate	10 0 —	Scotch Kale, bush.	0 9-1 0
— tally	5 0-10 9	Seakale, per dozen punnets	6 0-8 0
— Italian, basket	2 0-2 3	Shallots, new, p. lb.	0 2 —
Celeriac, per dozen	2 9 3 0	Spinach, French, crates	3 0-3 6
Celery, doz. bundles	1 0-13 0	— English, bushel	3 6-4 0
Chicory, per lb.	0 3-0 4	Salsify, bunch	0 3 —
Cress, doz. punnets	1 6 —	Tomatoes, Canary, deeps	2 6-4 0
Cucumber, doz.	2 0-4 0	Turnips, per dozen in bacs.	1 6-2 0
Endive, new French, per dozen	1 6-1 9	Turnip-tops, bush.	1 0 —
— Batavian, doz.	2 6 —	Watercress, p. doz. bunches	0 8 —
Garlic, lb.	0 2 —		
Horse-radish, English, bundle	1 0-1 6		
— foreign, per bunch	0 9-1 0		
— loose, per doz.	1 6 —		

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Asparagus "Fern," bunch ... 1 0-2 0	Lily of Valley, per doz. bunches ... 6 0-12 0
Carnations, per doz. blooms ... 1 6-2 6	Maidenhair Fern, per doz. bunches ... 4 0-8 0
Cattleyas, per dozen ... 9 0-12 0	Mignonette, per doz. bunches ... 4 0-6 0
Eucharis, per dozen ... 2 0-4 0	Odontoglossums, per dozen ... 2 6-6 0
Gardenias, per doz. ... 1 6-2 6	Roses, Tea, white, per dozen ... 1 0-3 0
Lilium Harrisii, per dozen blooms ... 3 0-5 0	— Catherine Mermet, per dozen ... 3 0-6 0
Lilium lancifolium album, per dozen blooms ... 1 6-3 0	Smilax, per bunch ... 3 0-6 0
Lilium rubrum, doz. ... 3 0-5 0	Tuberose, per doz. blooms ... 0 4-0 6
Lilium longiflorum, per dozen ... 4 0-6 0	

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantums, p. doz. ... 5 0-7 0	Ferns, small, per 100 ... 4 0-6 0
Arbor-vitæ, var., doz. ... 6 0-36 0	Ficus elastica, each ... 1 6-7 6
Apidistras, p. doz. ... 18 0-36 0	Foliage plants, var., each ... 1 0-5 0
— specimen, each ... 5 0-10 6	Lily of Valley, each ... 1 9-8 0
Cannas, per dozen ... 18 0	Lycopodiums, per dozen ... 3 0-4 0
Crotons, per doz. ... 18 0-30 0	Marguerites, per dozen ... 8 0-12 0
Cyclamen, per doz. ... 8 0-10 0	Myrtles, per dozen ... 6 0-9 0
Dracenas, var., per dozen ... 12 0-30 0	Palms, various, ea. 10-15 0
— viridis, per doz. ... 9 0-18 0	— specimen, each ... 31 0-68 0
Ericas, var., per doz. ... 12 0-36 0	Pelargoniums, scarlet, per dozen ... 0-12 0
Erythroniums, various, per dozen ... 6 0-18 0	— ivyleaf, per doz. ... 8 0-10 0
Evergreens, var., per dozen ... 4 0-18 0	Spiræas, per dozen ... 6 0-12 0
Ferns, in variety, per dozen ... 4 0-18 0	

REMARKS.—Cape fruit comes to hand in good condition. Plums, Kelseys, very large, per case, 6s. to 8s.; Peaches, 5s. to 8s.; Pears, 6s. 6d.; Nectarines, 6s. to 8s.; Grapes, 10s. to 13s. These fruits are all coming in better condition than hitherto. Kent Broccoli is arriving in very good condition; Brussels Sprouts are nearly over for the season; the Broad Beans quoted are Longpods from France. Roots remain at about the same value as last week.

POTATOS.

Various sorts, 85s. to 105s. per ton; foreign bags, 50 kilo, 4s. to 5s.; Dunbar Main Crop, per ton, 120s. to 125s.; Up-to-Date, 125s. John Bath, 32 & 34, Wellington St., Covent Garden.

SEEDS.

LONDON: March 27.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., state that the wintry weather naturally checks the sowing demand for field seeds, and a smaller business than is usual at this season is consequently being done. Meantime, as regards all kinds of Clover seeds, no change in values can be noted. The staggering prices now asked for perennials confine the sale of the same to very narrow limits. Strangely enough, however, imported Italian Peas dull and neglected. Spring Tares are in moderate request on former terms. There is no alteration in either Mustard or Rape seed. Bird seeds are quiet in demand but steady in value. Blue Peas and Haricot Beans meet a rather better sale, as also do scarlet and white Runner Beans.

FRUIT AND VEGETABLES.

GLASGOW: March 27.—The following are the averages of the prices recorded since our last report:—Grapes, English, 2s. 6d. to 3s. per lb.; Mushrooms, 1s. to 1s. 3d. do.; Tomatoes, Canary, deeps, finest medium, 4s. 6d. to 5s. per case; others, 3s. 6d. to 4s. do.; Bananas, extra, 9s. to 10s. per bunch; No. 1, 6s. 6d. to 8s. do.; No. 2, 5s. 6d. to 6s. Apples, Canadian: Baldwins, Spies, Greenings, Russets, &c., 15s. to 25s. per barrel; Americans, various, 14s. to 24s. do.; Maine and Boston, 16s. to 25s.; Californian Newtown Pippins, four in a row, 9s. 6d. to 11s. per case; Oranges, Valencia, ordinary, 420's, stamped paper, 10s. to 11s. per box; do., plain paper, 9s. 6d. to 10s. 6d. do.; large 420's, stamped paper, 12s. to 13s. do.; do., 420's, plain paper, 11s. 6d. to 12s. 6d. do.; extra large 420's, stamped papers, 13s. 6d. to 14s. 6d. do.; do., 420's, plain papers, 12s. 6d. to 13s. 6d. do.; large 714's, 13s. to 14s. 6d. do.; these prices are for sound fruit; Oranges, Jaffas, 144's and 152's, 13s. to 14s. per case; Palermo bitters, 200's, 7s. 6d. to 8s. 6d. do.; do., 240's, 7s. to 7s. 6d. do.; Lemons, Palermo, 300's, 8s. to 10s. do.; 360's, 7s. to 8s. 6d. do.; Onions, Egyptian, 8s. 3d. to 8s. 9d. per cwt.; Valencia, 4's, 8s. 6d. to 9s. do.; 5's, 9s. to 9s. 6d. do.

LIVERPOOL: March 27.—Wholesale Vegetable Market.—Potatoes, per cwt.: Lynn Greys, 4s. to 4s. 3d.; Bruce, 4s. 3d. to 4s. 6d.; Up-to-Date, 4s. to 4s. 4d.; Main Crop, 4s. 4d. to 4s. 9d.; Turnips, 10d. to 1s. per dozen bunches; Swedes, 1s. 2d. to 1s. 4d. per cwt.; Carrots, 2s. 3d. to 2s. 9d. do.; Onions, English, 5s. to 5s. 6d. cwt.; do., foreign, 3s. to 3s. 3d. do.; Parsley, 6d. to 8d. per dozen bunches; Cauliflowers, 1s. to 2s. 6d. per dozen; Cabbages, 4d. to 10d. do. St. John's Potatoes, 1s. 2d. per peck; do., new, 6d. per lb.; Grapes, English, 4s. do.; do., foreign, 10d. do.; Pineapples, 5s. each; Apples, 4d. per lb.; Tomatoes, 6d. do.; Pears, 8d. do.; Asparagus, 1s. per bundle; Mushrooms, 1s. 4d. per lb. Birkenhead Potatoes, 1s. to 1s. 2d. per peck; do., new, 2d. to 6d. per lb.; Peas, 8d. do.; Cucumbers, 6d. to 10d. each; Grapes, English, 2s. to 4s. per lb.; do., foreign, 10d. do.; Pineapples, foreign, 1s. to 5s. each; Mushrooms, 1s. to 1s. 6d. per lb.; Filberts, 10d. do.

CORN.

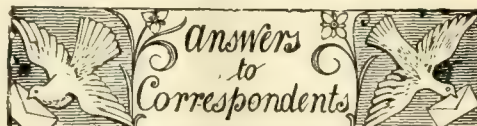
AVERAGE PRICES of British Corn (per imperial qr.), for the week ending March 23, and for the corresponding period of 1900, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1900.	1901.	Difference.
Wheat	s. d. 25 11	s. d. 25 8	- 0 3
Barley	s. d. 25 0	s. d. 24 11	- 0 1
Oats	s. d. 17 1	s. d. 17 9	+ 0 8

SCOTLAND.

TREES AND THEIR USES.

MR. MUNRO FERGUSON, M.P., delivered a most interesting lecture on the above subject at Musselburgh on Thursday, March 21. The lecturer devoted the greater portion of his paper to indicating how Scottish cities could be rendered beautiful by the planting of trees. There was no more fascinating occupation, he said, than the actual work of botany, forestry, and horticulture. In these pursuits there was a world-wide free-masonry, so that there was no part of the world to which the student could go where he had not a friend. In Scotland, it seemed to him that city adornment was still in its infancy, and when they compared what they were able to achieve here with what had been done at Wiesbaden, Copenhagen, and Munich, the result was not to their credit. He thought their city fathers might do more in the way of selecting trees for city adornment. The most familiar object in city adornment was a stunted, withered Elm. He recommended Poplars, oriental Planes, Chestnuts, Maples, Thorns, Oaks, Lilacs, Dogwoods, and Willows for this purpose. As to mischievous damage, he had previously remarked, that if to plant a tree in the neighbourhood of a town cost a penny, it took five shillings to protect it. As a remedy, he pointed out the example set by Germany, where school-children were encouraged in the study of botany. This might be followed in this country. D. T. F.



A JUDGE'S MISTAKE: J. M. B. The exhibitor's contention is a good one. The schedule reads thus:—"Six flowering plants, distinct species." The word "species" is not a loose term, as "kind" may be said to be, but must be given its proper botanical meaning. That the compilers of the schedule may have meant to stipulate for "generic" difference is nothing to the point, the judge's duty being to work in strict conformity with the expressed conditions in the schedule. *Dendrobium nobile* and *D. thyrsiflorum* are decidedly "distinct species."

BOOKS: A. E. Warne. *English Trees and Tree Planting*, by Ablett, published by Smith, Elder & Co., Waterloo Place, London, would suit your purpose. We cannot tell you the price. Number of pp. 434.

CATTLEYA MOSSIE BULBS: Mendeli. The pseudo-bulbs sent present the appearance often seen in freshly imported plants. They may have been attacked by what is called the Cattleya-fly at some time, but there is no evidence of the insect in a living state in any stage, and it is doubtful whether any would be developed from such plants. Few importations arrive without some of the plants showing traces of the ravages of insects in their native habitats.

INSTRUCTION IN AGRICULTURE AND BOTANY: B. A. Instruction in these subjects is given at the Kent County Council Institution at Wye, near Ashford, Kent; at that of the Essex County Council at Chelmsford, and several more, but these are the nearest to your place of abode.

NAMES OF FRUITS: F. E. T. Hunthouse.—E. H. Striped Beeing.—Q. R. G., Abergele. Marie Benoist.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—*Snowdrop*. The double-flowered "Snowdrop" is *Leucojum vernum*. The leaf is apparently that of *Strelitzia Reginae*, certainly not a Banana. Thanks for your complimentary reference to the *Gardeners' Chronicle*.

—J. F. 1, *Dracena terminalis stricta*; 2, *Dracena terminalis*; 3, *Dieffenbachia nobilis*; 4, *D. Bansei*; 5, *Callicarpa purpurea*; 6, *Epidendrum cochleatum*; 7, *Carex japonica variegata*; 8, *C. japonica*; 9, *Dracena Fraseri*.—R. R., Oakfield. Some of the numbers were detached, but so far as we can identify them 1 is a very uncommon form of *Odontoglossum triumphans*, with some indications of hybridity; 2, *O. Coradinei*; 3, a good *O. crispum* (two flowers); 4, *O. Wilkeanum*; the single white flower without number is *O. crispum Lehmanni*, the other a good *O. luteo-purpureum*.—*Inkerman*. 1, *Asplenium bulbiferum*; 2, *Pteris rubricaulis*; 3, *Doryopteris palmata*; 4, *Cyrtomium falcatum*; 5, *Pteris quadriaurita*; 6, *Lastrea aristata variegata*.—W. B. 1, *Cattleya Trianae delicata*; 2, *Dendrobium chrysotoxum*; 3, *Brassavola grandiflora*; 4, *Brunfelsia eximia*, commonly called *Franciscana eximia*.—*Mrs. Anstel*. *Sparmannia africana*.—H. C. 1, *Thuya occidentalis*, variety; 2, the common Silver Fir, *Abies pectinata*.

ROSES MARÉCHAL NIEL AND W. A. RICHARDSON: A. C. H. These varieties, if they have bloomed early in the year, may be cut hard back, and when they break, as they most likely will do strongly, the best shoots should be left, and tied in when of some length, and all weak shoots removed entirely. At the cutting back the soil should be enriched or removed, in so far as regards that which overlies the roots, in great part, substituting heavy loam and manure for that which is removed. We cannot tell you the cause of buds and leaves dropping, but it is probably due to an unhealthy state of the roots, to dryness or over-wetness of the soil, &c.

WILLOW PLANTING: J. B. If the ground has been suitably prepared, two men ought to be able to plant sixty rooted cuttings per hour, i.e., 600 per day of ten hours. We do not know the price of day labour in your locality, so cannot say what the cost would be. If planted in rows 2½ feet apart, and the plants stand at 12 inches apart, there will be required 17,424 plants per acre.

COMMUNICATIONS RECEIVED.—Estate Development Company.—W. G. S.—T. Meehan—H. W. W.—J. Bibby & Sons.—R. I. L.—G. M.—H. E.—C. de Candolle, Geneva.—C. W. H. G.—E. A., Paris.—J. B.—R. N.—J. C. T.—M. W.—E. J.—H. T. M.—H. M.—H. W. W.—J. O. B.—A. D.—C. H.—Geo. Fred. Roumeu.—Mrs. Mc L.—F. S.—J. R. E.—T. C. H.—T. S., Bury.—H. D. W.—J. C. T.—Southern Carnation Society.

GARDENING APPOINTMENTS.

MR. W. S. BLACK, for the past three years general Foreman in the Gardens, Scone Palace, Perthshire, as Gardener to Sir RICHARD WALDIE GRIFFITH, Bart., Hendersyde Park, Kelso.

MR. J. BOTLEY, for over two years Foreman at Blythwood Gardens, Maidenhead, as Head Gardener to the Rev. H. M. WELLS, Scarlet's Park, Twyford, Berkshire.

MR. D. A. GILBERTSON, formerly Head Gardener at Glanrhyd Portadown, Swansea, as Head Gardener to J. G. NEWTON, Esq., at the same place.

MR. W. H. AGGETT, for the period of seven years Head Gardener to the Bermondsey Vestry has been appointed Superintendent of Open Spaces to the Bermondsey Borough Council.

MR. JAMES SMITH, for the past three years Gardener to Colonel J. H. WILKINSON, at Elmhurst Hall, Lichfield, as Gardener to the same gentleman at Ashfurlong Hall, Sutton Coldfield, Warwickshire.

MR. J. P. KENDALL, late of the Culvers, Carshalton, Surrey, as Head Gardener to Lord AMHURST OF HACKNEY, Diddington Hall, Brandon, Norfolk.

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

TREBLED.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, AND ALL CLASSES OF GARDENERS AND GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.



THE

Gardeners' Chronicle

No. 745.—SATURDAY, APRIL 6, 1901.

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APPLES AND PEARS.

IN the early part of the nineteenth century, there appears to have been a generally received opinion that all the best Apples came from France, which was doubtless a mistaken idea, because we have it, as the opinion of a leading pomologist, that at the time of the battle of Waterloo it would have been difficult to have found twelve really good varieties of Apples on the Continent. It is certain that the following varieties were in general cultivation during the first ten years or so of the century: Beauty of Kent, Blenheim Orange Pippin, Fearn's Pippin, Golden Reinette, Hawthornden (old), Hollandbury, Juneating, Kentish Fillbasket, Kerry Pippin, Keswick Codlin, King of the Pippins, Margil, Ribston Pippin, Scarlet Nonpareil, Winter Queening, Wyken Pippin, and Yellow Ingestre—sorts which find a place in select lists to this day. To the first half of the nineteenth century we owe the production of such varieties as Adams' Pearmain, Cox's Pomona, Cox's Orange Pippin, raised from seed in 1830, although not distributed until several years afterwards; Dumelow's Seedling (Wellington),

Eclinvile Seedling, Emperor Alexander, distributed by Mr. Lee, of Hammersmith, in 1817; Frogmore Prolific, which stands as a memorial of that fine old gardener, Thomas Ingram; Gloria Mundi, Golden Noble, Mannington Pearmain, Red Astrachan, Striped Beeding, and Waltham Abbey Seedling.

Full descriptive notes of fruits are found in *A Guide to the Orchard and Kitchen Garden*, published by George Lindley in 1831. Between the years 1815 (at which time W. B. Page was preparing his *Prodromus* for publication, and in which he gave what probably may be regarded as a complete list of the leading varieties of Apples grown in that day) and 1831, the following appeared to have come into notice, and they may be taken as showing the order in which they would be of service on the table or in the kitchen:—Early Julien, Irish Peach, Red Astrachan, Emperor Alexander, Waltham Abbey Seedling, Alfriston, Cornish Aromatic, Dumelow's Seedling (Wellington), Golden Noble, Lord Nelson, Adams' Pearmain, Claygate Pearmain, Northern Greening, Ashmead's Kernel, and Braddick's Nonpareil. It is possible some of these were known locally much earlier in the century, but had not come into general use. Page had a famous out-door nursery at Hill, near Southampton, and grew an extensive collection of the leading out-door fruits, the Apples, Pears, Plums, and Cherries planted by the sides of walks; and this nursery was laid out probably quite early in the last century.

It is difficult to say with certainty when some of the leading Apples of to-day, excepting those which have been distributed during the last twenty years, were raised, as it is more than probable not a few were in cultivation for many years before they were distributed, having originated as chance seedlings. It is even possible that some which do not appear until 1830 originated during the last half of the eighteenth century.

The last half of the century which has just closed has witnessed many valuable additions to the list of Apples, both culinary and dessert, of fine quality. Some of these have become acknowledged market and garden varieties, such as Allington Pippin, Bismarck, Bramley's Seedling, which, in all probability, with Lane's Prince Albert and Newton Wonder, will become as popular in orchards as Dumelow's Seedling. Mention may also be made of Gascoyne's Scarlet, Golden Spire, New Hawthornden, Lady Sudeley, which yields superb fruits if grown in an orchard-house, as may be seen at some of the fruit shows held about the country at the end of July and early in August; Lane's Prince Albert, Lord Derby, Lord Sutfield (if not previous to 1850), Newton Wonder, Peasgood's Nonsuch, an epoch-making variety; The Sandringham, Stirling Castle, The Queen, and Worcester Pearmain.

It was towards the end of the century that crossing distinct varieties upon a definite plan was resorted to; and in connection with this work the veteran Charles Ross should be named.

Just about the time of the battle of Waterloo, the American blight, which is supposed to have been imported from America in 1787, was so prevalent in Apple-orchards and gardens in the south of England that fears were expressed, unless some effectual remedy was discovered to destroy it, that it might extirpate the whole race of Apple-trees. A remedy used with considerable success in those days was manufactured of one ounce of corrosive sublimate previously mixed in spirits, added to three

quarts of common tar, and the affected parts painted over with it. A Mr. T. S. Dyott, who about that time published a work entitled *The Orchardist*, strongly recommended the use of this mixture as a certain remedy.

The present century will in all probability witness a considerable addition to our new varieties, and it is the duty of the Fruit Committee of the Royal Horticultural Society to apply the severest test to all new introductions which come before them.

PEARS.

In the early part of the century Pears were not so numerous as Apples, but as many of them were of French origin, and as it was the custom of those who published lists to render the French names into the English language much confusion ensued. Many of the varieties catalogued in the first ten years of the century have gone out of cultivation, but some remain to this day, among them Bishop's Thumb, Gansel's Bergamotte, Catillac, Chaumontelle, Citron des Carmes, Glou Morceaux, Jargonelle, Swan's Egg, Uvedale's St. Germain, and the Windsor. Three Bon Chrétiens are mentioned, the Spanish, summer and winter, but neither in all probability the same as that we know as Williams. This, according to Dr. Hogg, was raised as far back as 1770, by a schoolmaster at Aldermaston, Berkshire, named Wheeler; the stock was secured by Mr. Williams, a nurseryman of Turnham Green, who distributed it, and gave it his name. It certainly does not appear in *Page's Prodromus*, published in 1817, as Williams' Bon Chrétien, the reason being that it is on record that a good deal of the stock of the Pear was secured for America by a Mr. Enoch Bartlett, of Dorchester, near Boston, who appears to have given it his name, as it is known in the States as the Bartlett Pear.

George Lindley, in 1831, gives the names of the following well-known Pears as in cultivation at that period, viz., Williams' Bon Chrétien, Autumn Bergamot, Calebasse, Beurré de Capiaumont, Duchesse d'Angoulême, Flemish Beauty, Hacon's Incomparable, Hazel or Hesse, Marie Louise, Seckle, Urbaniste, Easter Beurré, Beurré d'Arenberg, Beurré Rance, Forelle, Winter Nelis, and Bellissime d'Hiver.

It is difficult to fix with anything like exactness the time of the introduction of not a few of our leading Pears; but it may be stated almost with certainty that the following were distributed previous to 1850:—Alexandre Lambre, Baronne de Mello, Beurré Clairgeau, Beurré Diel, Conseiller de la Cour, Durondeau, Glou Morceau, Josephine de Malines, Louise Bonne of Jersey, Marie Louise, Seckle, and Thompson's.

To the last half of the century belong Beurré Hardy, Beurré Rance, Clapp's Favourite, Conference, Doyenné Boussoch, Doyenné du Comice, which first fruited in 1842; Emile d'Heyst, Gregoire Bourdillon, Marguerite Marillat, Knight's Monarch, Nouvelle Fulvie, Olivier de Serres, Pitnaston Duchess, Souvenir du Congrès, Triomphe de Vienne, and Zephirin Gregoire.

As seedling Pear-trees take a much longer time to become fruitful than seedling Apples, requiring, it is said, from fifteen to eighteen years, it has no doubt happened that some leading varieties were in cultivation for a long period before their merits were discovered; and as Pears are variable in different localities, time and change are both necessary to bring out in all its fulness the real value of a particular sort. *R. Dean.*

NEW OR NOTEWORTHY PLANTS.

ARCTOTIS DECURRENS.

For this beautiful and most free-blooming African Composite I am indebted to the kindness of Mr. Ayres, who sent me a packet of seed of it in the month of February of last year, which he had collected in Namaqualand during the previous autumn. Only one seed germinated, and the plant, after passing the summer in the open air in my garden, came into flower in a pot in my greenhouse early in this year. It was sent to me merely as a large, white-flowered variety, as botanical names are unknown in Namaqualand, where these plants are only known as Marigolds. When it came into flower, however, I thought that it must be the plant figured by Jacquin on plate 165 of the second volume of his fine folio work entitled *Hortus Schönbrunnensis*, which opinion was confirmed at the Kew Herbarium, where I sent specimens for identification. There is only one slight difference between my flowers and the coloured plate, where the colour of the under-petal is made out to be a shade of rose-colour, whereas in the flower it is nearer claret-colour. The flower and leaf are most accurately represented by Mr. Worthington Smith in the accompanying wood-cut (fig. 81). As this fine plant has in all probability been for nearly a century lost to European gardens, it is to be hoped that it may now be retained to ornament them. With a view to this, I am now endeavouring to get it to seed by artificial fertilisation, but cannot yet say whether my efforts will be successful or not. *W. E. Gumbleton.*

ODONTOGLOSSUM CRISPUM CITRINUM.

A new yellow *Odonoglossum crispum* of the true type has just flowered with Messrs. F. Sander & Co., at St. Albans. Yellow crispums were, until quite recently, supposed to be very improbable, but since Mr. de B. Crawshay's fine *O. c. aureum* has proved that a yellow form of the best type of *O. crispum* is an accomplished fact, this new-comer of Messrs. Sander's can take its place as the next in its train. All the segments are broad, and the flower well formed, though to get it to its best it will need better cultivation than that which falls to the lot of a plant in general stock.

The sepals are bright yellow, changing to primrose colour towards the base; the slightly fringed and broader petals light yellow, with the outer third towards the tips bright citron-yellow; lip pale yellow, changing to cream-white towards the crimped margin; callus and disc dark yellow, with a few slight reddish lines on each side; column yellowish-white, with an elongated reddish patch on each side of the upper surface. The reverse of the sepals bear a slight purplish shade. *James O'Brien.*

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT CHESSINGTON, STREATHAM.

In his garden, situate in the Christchurch Road, Streatham, Surrey, Mr. R. G. Thwaites has built a neat block of Orchid-houses, in which the engrossing pursuit of raising Orchids from seeds is pursued with considerable success, both Mr. and Mrs. Thwaites making it a pleasant pastime, and Mr. J. M. Black, their gardener—who has thoroughly graped a subject which has sorely puzzled many an older man—a congenial occupation. Species and hybrids of *Dendrobiums* are the favourites, the species being mainly represented by fine varieties, selected with a view to hybridisation; they have been making a fine show for a long time, a group of them at the meeting of the Royal Horticultural Society on March 12 having secured for their owner a Silver Banksian Medal. The display is still well sustained, and among those noted as being more than usually fine at the time of our visit, were *Dendrobium* × *Euryalus*, "Thwaites' variety," a magnificent flower of the *D. rubens grandiflorum* class, with very large cream-white flowers, tinged



FIG. 81.—ARCTOTIS DECURRENS.

with purple, the outer portions of the petals bearing a most beautiful claret-purple reticulation, and the labellum a rich maroon-purple disc. Other varieties of the *D. × splendidissimum* and *D. × Ainsworthi* class were in bloom; also *D. × chlorostele Owenianum*, *D. × Schneiderianum*, "Hardy's variety," with a fine orange-coloured disc to the lip; the very singular, pretty, and fragrant *D. × Roeblingianum* (*Ruckeri × nobile*), for which an Award of Merit was received on March 12. The form of the flower is novel, and it seems to indicate that if the rare *D. Ruckeri* could be again imported it would make what is called a new break.

In bloom also were *Dendrobium × Wiganiae*, *D. × Aspasie roseum*, *D. × Cheltenhamense*, *D. × pallens*, *D. × melanodiscus*, *D. × Luna*, the dwarf-growing floriferous and fragrant *D. × Isis* (*moniliforme × hercoglossum*), and other hybrids. Among the imported *Dendrobiums* was a fine selection of varieties of *D. nobile*, including the pure white form, and the richly coloured *D. n. nobile*, with

the distribution of the moisture required to sustain such delicate vegetation, a sprayer is frequently used. Many interesting crosses of *Cattleya* and *Lælia* are here in different stages of growth, among them being the two hybrids with *Lælia Digbyana* as the seed bearer, and *Cattleya Warscewiczii* and *C. aurea* respectively as the pollen parent, and about the raising of which Mr. Black furnished us with interesting particulars given in the *Gardeners' Chronicle*, December 1, 1900, p. 404. The plants are yet small, but there are a good many of them, and in time they will serve to elucidate a problem over which there has been much discussion. Another seed-capsule on a *Lælia Digbyana* bids fair to also give good results.

The large span-roofed *Odontoglossum*-house is filled with a very healthy and sturdy lot of *Odontoglossums*, consisting chiefly of *O. crispum*, some of which were in bloom; also some good *O. Pescatorei*, one of which was a remarkably pretty purple spotted form. The practice of using up spare

broader, and without the distinctly divided front and side lobes, as in most hybrids of *L.-C. × elegans*. The flower sent by Mr. Colman measures 7 inches across, the petals being 2 inches wide. The flower is of a bright lilac-rose, with a white base to the lip, which is coloured crimson-purple in front. It is very fragrant, and altogether a very desirable hybrid.

CLEMATIS INDIVISA.

THIS beautiful New Zealand species is all but hardy, but in any case it is simply worth the protection of a greenhouse. The foliage is attractive from its rich glossy-green colour, and the star-like white flowers are produced in profusion. The anthers are of a deep pink or purplish colour, contrasting with the white segments of the flower. Some plants in pots were recently shown before the Royal Horticultural Society by Messrs. William Paul & Son, of Waltham Cross, and excited much interest as showing how valuable a decorative plant it is. Our drawing (fig. 82) was made for us by Mr. Worthington Smith.

MELON CULTURE.

THE weather has not been favourable for these plants, excepting in houses of the lightest kind which are efficiently heated. Still, in spite of these advantages, the plant will have suffered from lack of sunshine and the use of a good deal of fire-heat. For many years I have sown seeds twice for a moderately early crop of fruit, and more than once the best plants were those of the second sowing. Another important matter is to always plant from the seed-pots into the bed, rather than to pot them off and keep for some time in pots, which, although very healthy-looking, make scarcely any progress for several days after being planted in the beds. The cause of this may be due to the outer roots perishing through the soil not being sufficiently warmed, and a fresh lot of roots has to be made before the plants will begin to grow. Young plants raised from seed sown a month ago will now be in a fit condition to plant out, but if the pits or houses are still filled with other things, let the Melon-plants be shifted into 5-inch pots forthwith. Every plant should be staked and secured with broad strips of soft netting, so as to do away with all risk of injury to the stem from sharply bending over, a cause, in some cases, of canker. When Melon-plants are put out into the beds, the soil should be made into the form of hillocks, and rendered firm by hand-pressure, and the plants supported with longer stakes till they reach the trellis. When that is done, care should be taken to avoid suspending the plants by the bine when the soil settles down, which is always a danger if a quantity of stable-dung and leaves has been placed on the bottom. The bed should be maintained in a moderate degree of moisture, and the air kept sweet by slightly raising the lights at the top. If air is given early in the day it should be taken off about 1 P.M., the plants being then gently sprayed with tepid water, and parts of the house damped down with warm water.

The best kind of soil for growing Melons is a rich, mellow, moderately-close loam, some mortar-rubble, and a sprinkling of Thompson's manure. A large mass of soil is not required. I have grown splendid fruits in pots and boxes, also in beds of soil not more than 3 inches in thickness, and 2½ feet in width. The beds should be afforded dressings of similar compost when the roots show on the surface, repeating these from time to time. Plants that are put out on beds at 2 feet apart are best when trained on the herring-bone plan, which is done by taking the leading shoots up the trellis 4 feet, and then pinching out the point, which will force laterals to form plentifully. Of these four on each side of the stem should be retained, and the others removed. These shoots should be trained horizontally, and stopped at two joints above the flower that is to bear fruit. If, however, no fruit



FIG. 82.—CLEMATIS INDIVISA.

(Segments of the flower white; anthers of a purplish tint.)

many good intermediate varieties, one of which, now flowering for the first time, is a very distinct white with rose-pink tips to the segments, and a dark purple disc. There is a peculiar wavy arrangement of the parts of the flower which renders it very striking, and the flowers are very profusely produced. In a basket, growing together as imported, and both in flower, were *D. barbatulum* and *D. luteolum*; and among others noted were *D. Wardianum album*, *D. crassinode Barberianum*, *D. Falconeri giganteum*, and a fine form of *D. Brymerianum*, in which cross-fertilisation had been again attempted, although previously it has failed. At one end was a good batch of *Lælias*, *Cattleyas*, and *Lælio-Cattleyas*, some of them with seed-vessels approaching maturity; and in flower were a fine plant of *Odontoglossum ramosissimum* with two spikes, *Cymbidium Lowianum*, *Cattleya Trianae alba*, and other *Cattleyas*.

The seedling-house is fitted with glass cases, in which to raise and nurse the seedlings in their earliest stage; afterwards they are put into very small pots, and plunged several together in a suspending-pan, and then hung up near the glass of the roof. The innumerable tiny plants seem to be kept always moist, but never very wet, and in

bracken rhizomes from the Orchid-peat is here found to be beneficial, and as far as the quantity of this material admits, it is made use of in potting the plants. The hybridising of *Odontoglossums* is also being pursued, and with the diligent care given to all the Orchids at Chessington, they should succeed well.

LÆLIO-CATTELEYA × CAPTAIN PERCY SCOTT.

The flowering of this continental hybrid was recorded in the *Gardeners' Chronicle*, December 16, 1899, under the parentage assigned to it by the raiser, viz., *L.-C. × elegans grandiflora × C. labiata flammea*, a record which, if correct, would make it a form of *L.-C. × Schulzeana*, figured in *Lindleya*, xi., p. 21. A splendid flower of it, sent by Jeremiah Colman, Esq., Gatton Park (gr., Mr. W. P. Bound), proves the record incorrect, as the one parent is evidently *L.-C. × Schilleriana*, a plant which, until recently, was often found under the name *L.-C. × elegans* in gardens, especially on the continent. The flower is equal in size to that of a very fine *C. labiata*, and it adheres closely to that parent in shape. Comparison with the *L.-C. × Schulzeana* figure at once proves the difference, the flower of this being much larger, and the lip

is produced at the first joint, pinch the shoot back to a point just above the joint, and in most cases the sub-lateral will show flowers. As soon as the flowers begin to open generally, some gardeners keep the plants dry at the roots, believing that by so doing they favour a good set; but my practice is to afford as much water as the plant requires, and to keep the air rather drier than before till the fruits are set. When Melons are grown in pots and tubs or boxes, three fruits per plant are as many as a plant will carry and finish properly.

The temperature of a Melon-house or pit should be 70° by night and 75° by day by fire-heat, and on bright days, when the heat in the pipes should be lowered, it may run up to 85°, air being afforded in more or less quantity according as may be dictated by the weather. When the structure is closed, the temperature may safely run up to 90° if the air be kept moist. When the fruits are swelling, and till they begin to mature, water and manure should be freely afforded. I incline to the belief that splitting of the fruits at their last swelling is the result of a check to the skin, causing it to lose its elasticity; and this may be caused by dryness at the root, or perhaps by a very hot, parching atmosphere. After the Melons show signs of ripening, the beds and the air of the house should be drier. I have found it to be good practice, as soon as the fruits begin to colour, to sever them from the plants, and to let them ripen in the nets or other means used to prevent them from falling. Amongst the several good scarlet-fleshed Melons, Sutton's A 1 I have found to be excellent in every respect. *H. Markham, Wrotham Park Gardens, Middlesex.*

THE ROSARY.

ON CLIMBING ROSES.

AIMÉE VIBERT—CLOTH OF GOLD—AYRSHIRE—MULTIFLORA—MARECHAL NIEL—AN INDOOR HERO—CHESHUNT HYBRID—LONGWORTH RAMBLER—MARIE HENRIETTE—GLOIRE DE DIJON AND ITS OFFSPRING—RÈVE D'OR: ITS HISTORY—A HIDEOUS DREAM.

STRICTLY speaking, I believe there is no such thing as a climbing Rose, if by climbing is meant the power of fixing itself to any support against which it may be placed, whether wall, or fence, or stake. We have many rampant-growing Roses which are called climbing Roses, whose claim to be such no one for a moment thinks of disputing, and, like most other Roses, the class has received many additions during the past half century; before that time they were comparatively few in number.

Probably one of the best known of those in existence before that time was Aimée Vibert (Vibert, 1828), which still finds favour with a great many, and is, I fear, too often put on one side to make place for newer but not better varieties. It is very free-flowering, very vigorous, and almost evergreen, of a pure white colour.

Then there was, of course, that glorious yellow Rose Cloth of Gold, of which a glowing description was given in one of your late numbers; but it was so rarely seen, and so difficult to establish in our cold and damp climate, that it has not been included even in the National Society's catalogue.

In those bygone days the Ayrshire Roses were in much request. They were very free flowering, and very vigorous; but I think they have been mostly pushed out of the way by modern introductions. In truth, the grower who wishes to have climbing Roses finds himself in a difficulty (of course I am speaking only of amateurs)—the difficulty of finding space for them. You may plant a few on the walls of your house or on a fence, but your space is soon exhausted, and you are obliged soon to give some of them up altogether, because of the rampant character of their growth. Thus, I had a plant of *Rosa multiflora simplex* on a wire trellis close to my house, and when it was in flower during the early part of the season it was really a beautiful sight; but it was so vigorous, and grew so rapidly, I had to give it up—and I remember seeing some enormous plants of it at my late friend's, Mr. T. W. Girdlestone, of

Sunningdale, of which he was justly proud, one especially covered a large space, and was a mass of the purest white. Many of the so-called climbing Roses were of a distinct Noisette character, and partook of the bright yellow and fawn colour of those varieties. Of course, the most brilliant of these is Maréchal Niel, and I remember seeing in this neighbourhood a large plant of it on the side of the house, giving every year an abundant crop of blossoms; but I came to the conclusion that as an outdoor Rose it is a failure. The flower-stem is very slender, and not sufficient to support the bloom in an upright position; consequently the flowers all hang down their heads, and the rain and rough weather to which we are exposed in our climate so discolours the outside petals that they look at a little distance as if they were half dead. In truth one rarely sees this very beautiful Rose in anything like good form out of doors, its true position is the roof of a conservatory; there are many glorious plants of it in that position one has seen. There are some growers who seem to be more successful than others with it, and who can produce flowers of a deeper colour than others. Those who have visited the Drill Hall fortnightly shows will readily call to mind the boxes of beautiful blooms contributed by Mr. Walker, of Thame; their depth of colour astonished everybody. Some thought that there was a peculiar strain of it which he possesses, while others thought it was some peculiarity of cultivation. Also, I recollect Mr. George Mount, of Canterbury, had a peculiarly high-coloured strain, which I believe he obtained from the greenhouse of that wonderful veteran artist, Mr. T. S. Cooper. Very often, however, this colour is produced by the flowers being a little longer time cut. I dare say we most of us have noticed how much this changes the colour of many Tea Roses. It is somewhat strange that this variety has never produced any seedling, I will not say to exceed, but to equal its flowers in its brilliancy of colour. As to a white Maréchal Niel, I do not think it would find favour with Rose-growers. To obtain climbing Roses or rampant Roses of high colour has always been a point at which raisers of seedlings have aimed.

Messrs. Paul & Son produced a Rose which made a great sensation as being the commencement of the new race of Hybrid Teas. Cheshunt Hybrid is a rampant and vigorous growing Rose, perfectly hardy, and adapting itself to any situation in which it may be placed; its colour is objectionable to many, as it has a touch of violet in it which develops into a magenta colour, which is certainly not over pleasing. It has been superseded in many gardens by a Rose sent out by George Prince, of Oxford, who received it as a present from its raiser, Liambaud, and which he called Longworth Rambler. It is a deeper colour than Cheshunt Hybrid, has abundant foliage, and is nearly evergreen; it produces flowers up till very late in the season, and is fragrant. I have a plant of it on the side of my house. I cannot give it all the space it would like to use up, and consequently I have to cut out barrow-loads of it every season.

Reine Marie Henriette.—This is another dark-coloured Rose, which is in this section much valued. It is of a somewhat straggling habit, not unlike the Dijon Roses, and it has been sometimes called the red Gloire de Dijon; it is probably better formed than either of the two preceding, and where space is limited and choice has to be made, I should certainly prefer Longworth Rambler. Indeed, only the other day an unknown correspondent asked me the name of a dark-coloured Rose for his greenhouse, and, knowing the good qualities of Longworth Rambler as an out-of-door plant, I advised him to plant it indoors, and I believe he is quite satisfied with the result. The advent of what are called the Dijon Roses somewhat revolutionised our ideas about climbing Roses. The original Gloire de Dijon came up in the border in the garden of Jacotot, of Dijon; he could give no account of its origin, and was himself very much surprised at the prize he had gained. No one need be told what the "Glory of John" is; it is not

an exhibition Rose, although when it first opens it seems to claim that honour, but when fully open it shows its centre. I have more than once seen an exhibitor relying upon it, hoping that it would endure, but was obliged at last to cast it out, and substitute another flower. Many seedlings have been raised from Gloire de Dijon more or less partaking of the character of the parent, and I think the best of these is Bouquet d'Or, raised by Ducher in 1872; its habit is much more compact than any of the others of the tribe, the foliage being very thick, with glossy leaves; the flowers are of a bright dark yellow, and in the bud are very beautiful. I do not think a place can be grudged to this beautiful Rose anywhere.

Rève d'Or.—This was raised in 1869 also by Ducher on the eve of the terrible days of the siege of Paris, when Rose-growers could pay little attention to their productions. A plant was, however, sent to me by a friend from Paris, which took six weeks to reach me. There seemed but little hope of its surviving, but it did, and grew marvellously. My plant was placed on the side of my dwelling-house, facing east, and so rapidly did it grow that in about three years time it nearly covered one side of the house, and those who saw it will not readily forget the sight; it had more than 3000 blooms, many of which were of perfect form and brilliant colour. I was, perhaps, too proud of it, for in one or two of the cold winters we had in the eighties, it was cut down to the ground. I was preparing to have it dug up when I noticed some signs of life, and so it was allowed to remain; it repaid me by again shooting forth, and though it has not quite covered the space it did before, it is again a very vigorous and free-flowering plant, and does not seem as if it would die of old age. *Wild Rose.*

(To be continued.)

CULTURAL MEMORANDA.

ACALYPHA HISPIDA.

ACALYPHAS are mostly grown for their pretty foliage, but *A. hispida*, known in gardens as *A. Sanderi*, is remarkable for its long, pendulous, rosy-carmine racemes, which are freely produced even on plants growing in small pots, reminding the beholder of the flowers of *Love-lies-bleeding* when seen from a distance. The cultivation of *Acalyphas* gives no trouble, and cuttings of half-mature wood inserted in sandy soil round the sides of pots soon form roots in a hot-bed. The best kind of soil for them is one consisting of loam, peat, and sand in about equal proportions; and the most suitable place for the plants when growing is the stove, and afterwards they may be grown in an intermediate-house. The subject of this note should not be over-potted, it being easy to grow good plants in 48's and 32's, and for house and table decoration pots of these sizes are suitable for any of the species. When the pots fill with roots, weak manure should be frequently applied. *H. Markham, Wrotham Park Gardens, Barnet.*

THE BULB GARDEN.

FRUITLARIA PLURIFLORA.

THIS rare species belongs to the early-flowering set. It forms a stout fleshy stem half a yard high, sparsely clothed with lanceolate, sessile, alternate leaves, ranging from 6 inches in length when near the base, to mere bracts mixed up with the inflorescence. The flowers are campanulate, pale red inside, tinted purple outside, measure an inch in length and span, average six to eight in number, and are arranged in a loose spike. The perianth segments are markedly keeled on the outside. The plant is quite hardy, thriving in any light sandy soil. It starts to grow with the new year, flowering even before the ubiquitous *Narcissus* in the open ground. The spikes are very useful for cutting at a season when flowers are scarce.

MERENDERA SOBOLIFERA.

The members of this genus are not very popular plants, possibly on account of the loose structure of their flowers. *M. sobolifera* is a very interesting little plant, growing 3 inches in height. It produces three *Galanthus*-like leaves, and usually two white flowers, the segments of which are lanceolate, $\frac{3}{4}$ inch long, and have one stamen at the base of each. The petals are not joined together at their base as in *Crocus*, but the perianth is split right down to the ovary as in *Bulbocodium*—the plant's nearest ally. Each segment much resembles a miniature flower of *Spathiphyllum*. The tuberous roots are brown and queerly shaped—somewhat resembling the "merry thought" bone of a fowl. A colony of these little plants, growing on a rockery, would prove interesting to those who study singular plants, and may even be regarded as showy when massed together in quantity. Winds

There is a degree of solidity about the flower of *F. pudica* which may account in some degree for the duration of its blooms. The bright yellow tint of its campanulate flowers is very pleasing, while its increased stature, when compared with that of *F. aurea*, is not a little in its favour. Unfortunately for the latter, the flowers are so much upon the ground, that the first heavy rain destroys much of their beauty.

MONTRETIA "GERMANIA."

This bulbous plant is a novelty sent out by Messrs. Wallace of Colchester, and one which, if we may judge by the parentage, should be of value as a garden plant. It is said to be a cross between *Crocasmia aurea imperialis* and one of the *Montbretias*, possessing the vigorous growth of the former, and the compact, bushy habit of, say, *Montbretia Etoile-de-Feu*. It grows to a

the long rest, the bulbs start quickly into growth when planted in a soil still warm. Home-grown roots, on the other hand, start less rapidly, the risk of injury to their frail stems and leaves is much less. I have planted, quite lately, some bulbs of the *Eldorado* section as firm and sound as could be desired, and presently these will grow away and flower without check. The mode of keeping the bulbs in dry sand is so simple that I feel sure many would adopt this method if once they gave it a trial, and those who have a clay soil to contend with will find spring planting a great gain, and there is so much of beauty in these flowers that any attempt to make their condition under cultivation happier should be welcomed. In very deep, sandy soils, autumn planting has its advantages, but even so, the plants are better for protection. *E. Jenkins, Hampton Hill.*

FATSIA JAPONICA.

I AM sending you a photograph (fig. 83) of a shrub of *Fatsia japonica* (*Aralia Sieboldi*), growing in the open air at Cliff Dene, Bonchurch, I.W.; it is 13 feet 6 inches in height, and 83 feet in circumference, and carries 278 spikes of bloom. It has been planted in its present spot thirty years. I have not seen one so large. *H. Lee, gardener, Shanklin Towers, I. W.*

NEW PALMS.

ASTEROGYNE MARTIANA, WDL.—Amongst the Central American Palms, there are a great many that are worth cultivating, notably some of the numerous species of *Chamaedorea*. I recently had the opportunity of introducing some good ripe fruits of some of the rarer Palms from Central America, which germinated. Amongst these is the interesting *Pato de Gallo*, a plant once described by *Ersted* as *Geonoma trifurcata*, but previously by *Wendland* as *Geonoma Martiana*. Afterwards *Wendland* based upon this species his new genus *Asterogyne* in *Bentham and Hooker's Genera Plantarum*. This species is dispersed over Guatemala and Costa Rica from the sea level up to an elevation of 3,000 feet, but is especially abundant between 600 to 1,200 feet. It grows in every kind of soil, but best in a sandy loam, always in the shadow of the forest, especially of high forests, with but little or no underwood. It dislikes full light so much, that it dies down in a short time when by accident a tree falls which had previously given it the necessary shade. The leaves are much esteemed for thatching, as they are durable for about four years. The stem attains a height of a foot and a half, and is about 2 inches in diameter. The leaves are about 4 feet long, spatulate, narrowed at the base, incised 1 foot deep at the apex; the petiole is about 2 feet long, the lamina 3 feet long, 10 inches broad, much folded; the rachis has a length of 24 to 28 inches; on each side there are about forty veins. So this Palm forms fine and very decorative specimens of about 6 feet high. In youth it is a rapid grower in a mean temperature of about 25° C. = 77° F. (17–32° C. the extremes).

Calyptrogyne sarapiquensis, Wendl.—This Palm grows in Costa Rica, together with the foregoing one, but it is much rarer. The stem is short, about 6 feet high, and many-leaved. The leaves are about 6 feet long; the petiole has a length of 16 to 20 inches; the laminae are oblong, 24 to 28 inches broad, 4 to 4½ feet long, pinnate. The pinnules are very irregular in breadth and number (five to fifteen), and they are distant one from another $\frac{1}{4}$ inch to 6 inches. Of more regularity is the total number of the veins, which start from the main rachis, viz., thirty-five to forty. These veins are distributed over the five to fifteen pinnules, so that there are pinnules with but one, and others with seven to ten veins. In this way the species much resembles many *Geonomas*. I have in my collection some dozen seedlings which grow well. *Udo Dammer, Berlin.*

(To be continued.)



FIG. 83.—FATSIA JAPONICA, AT BONCHURCH, ISLE OF WIGHT.

and rain, however, play havoc with such fragile flowers, and they are best when planted close to a sheltering piece of stone. *G. B. M.*

MUSCARI AZUREUM.

To see this charming plant at its best, the bulbs should be planted in groups on banks, or where there is a background against which its flowers are shown. It is one of the sturdiest of the species of *Muscari*, and the colour becomes visible before the miniature pyramids of flowers are well above the soil. Some clusters are now in flower, in company with *Iris reticulata*, in my garden, making a pleasing picture. The colour of the *Muscari* flowers is a porcelain-blue marked with white lines, and each strong bulb has two or more flower-spikes. Growing in a sheltered spot, the plants have not felt the recent cold winds, which withered up the *Iris* named in a short space of time.

FRITILLARIA PUDICA.

Adjacent to the clumps of *Muscari*, some plants of *F. pudica* and *F. aurea* are coming into flower, though they do not usually endure much frost. Still the plants flourish and increase, as witness quite a batch of young plants appearing around them.

height of 3 to 4 feet, and the abundantly-branched flower-spikes bear expanded flowers about 2 inches across. The colour is described as rich glowing scarlet, shading to brilliant-orange with a blood-red throat. Even if this novelty falls somewhat short of the description, the plant will have an interest of its own for those who grow these graceful plants. The illustration accompanying the description certainly reminds me more of the flat, expanding flowers of *Crocasmia*, than the more tubular form seen in the *Montbretia J.*

TIMES OF PLANTING CALOCHORTUS.

The season usually given in bulb catalogues for planting *Calochortus* is late autumn. I have, however, a clear recollection of planting them twenty-five years ago in the months of February and March. What was true of this, my first planting, has been confirmed subsequently; and I have come to the conclusion that if the usual time of planting was reversed, failures would be fewer. My objection to autumnal planting is that the plants suffer so greatly from the loss of their leaves in the winter, and from slugs; and this is greater when newly-imported bulbs are planted, as by reason of earlier ripening in their native home, and

THE GOLDEN PIPPIN.

THIS is an old Apple, and I suppose, as aged persons are often called "old fogeys," this Pippin may be considered as an out-of-date thing. At one of the meetings of the Royal Horticultural Society last year, when there was a large display of Apples, I was talking to one of the young members of the firm of Thos. Rivers & Son about Apples. He asked, "Did you ever try the Golden Pippin stewed?" I replied "No." He said, "It is like a delicious sweetmeat."

I happened to have an old Apple-tree, which gardeners here call a "Golden Pippin." Judging from the size of its trunk, it must be somewhere near fifty years old. It never fails, however, to yield a large crop, although mostly pestered with the Codlin Moth. In truth, the "gold" of my Pippin is rather greenish. Anyhow, I tried its fruit stewed in sugar, and a small quantity of water. I never have come across a stewed Apple that behaves like this one. Instead of becoming spongy and squashy, its quarters swell out and become almost transparent. A veritable delicious sweetmeat, as Mr. Rivers told me. So I have little doubt that, although it is greenish when ripe, it is what is called the "Golden Pippin." Of Roses it has been said that few, if any, of the new ones with grand names have beaten the old ones. And perhaps it is so with regard to Apples. There is always a rage for novelties, and fine varieties because they are old and may be common, are neglected, till no sale is found for them, and they disappear, except as antiquated specimens in some old orchard.

As I am writing on this Apple, I may as well mention a few more notable ones, which I have come across. I have another old Apple-tree, of about the same age as the former, if not older. Gardeners call it the "Gravenstein" Apple; but I have not been able to find this name in any of the catalogues. [Many nurserymen have it. Ed.] Its Apples are about the most juicy and crisp that I have known. They are always occupied by the Codlin Moth. An old gardener said, "If you wish to fill your stomach, eat a Ribston Pippin; but if you wish to quench your thirst, eat a Gravenstein." It is one of the juiciest Apples.

Now, about two Crabs. The "Transparent" Crab is oval, and about as large as an ordinary Plum. If made into a tart, skin and stalk unremoved, it makes a capital tart, and the little stalks can be used as handles to put the Plum-like Crab into one's mouth. It is a delightful Crab for tarts. One never sees it in the shops. Another little gem is the scarlet *Malus baccata*, of about the size of a Cherry. When bottled, the surrounding water becomes red. Evidently the colouring matter of this pretty Crab is soluble in water. When stewed with sugar, the red liquid turns into a delicious jelly with the little crabs embedded in it, having now lost their colour, which they imparted to the jelly. This is another delightful fruit for stewing, but one never sees it in the shops. *E. Bonavia, M.D., Worthing.*

THE WEEK'S WORK.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HUSSEY PACKE, Esq.,
Prestwood Hall, Loughborough.

Chrysanthemums.—The young stock of plants should be potted in 48's and 32's. As a potting soil, turfy loam three parts, leaf-soil and spent Mushroom-bed manure each one part, to which a quart of steamed bone-meal may be added to each wheelbarrow-load used. The crocking of the pots should be carefully done, and the plants potted firmly. Return the plants to frames stood in a sheltered place, keeping them close, and affording water sparingly until growth recommences. In bright weather afford an overhead syringing. If green-fly shows itself, dip the heads of the plants in suds made of softsoap and water.

Herbaceous Calceolarias.—The plants are rooting rapidly, and any with flower-spikes showing may

be afforded weak liquid-manure occasionally. Green-fly must be destroyed, or the plants will soon be spoiled. The plants may be kept in cold pits and frames for the present, and afforded a slight syringing on bright days.

Seeds.—Sow for autumnal flowering the seeds of *Primula sinensis* and *P. sinensis* var. *stellata* in well-drained, shallow pans, filled with soil consisting of equal parts light loam and leaf-soil, passed through a sieve with a half-inch mesh, and mixed with a good deal of sand. Having made the soil firm and level, scatter the seed evenly, and press it into the soil with a flower-pot having a smooth bottom; cover very lightly with some fine particles of soil and silver-sand, apply water with a fine rose-can, and cover the pans with a piece of glass, over which place moss or paper till the seeds germinate. A temperature of 65° will be required. Shade in bright weather, and do not allow the soil to become dry, or germination will be partial. Gradually inure the plants to light and air by tilting the pieces of glass by day until they can be exposed fully. Seeds of *Celosias*, *Toreneas*, and *Balsams* may now be sown—the latter in small pots, thinning out the seedlings to one per pot, and shifting them as fast as the roots touch the sides of the pots, until they come into 8 or 10-inch pots. The *Balsams* require a rich, loamy soil, and to be afforded liquid-manure and soot-water after being well rooted in the last shift.

Begonia Gloire de Lorraine and the variety Caledonia.—The propagation of these *Begonias* will now require attention. Having washed and crocked a sufficient number of thumb-pots, fill them loosely with soil to the rim; make a hole in the middle, insert a cutting, and fill the hole with silver-sand, making the soil firm about the cutting. The cuttings being struck singly in a pot, it is not necessary to disturb the roots at the next potting. The best cuttings are those which grow at the base of the old plant—not those on the flowering shoots. Place the cuttings in a propagating-frame, on bottom-heat of 80° to 85°, standing them close together on a bed of coal-ashes, &c. Tilt the frame at night, syringe slightly in the early morning, and close the frame and shade from sunshine. A compost suitable is one consisting of sandy loam and leaf-mould in equal proportions, with plenty of sand.

THE HARDY FRUIT GARDEN.

By C. HERRIN.

Strawberry plants.—The plants which have been forced should be put into cold frames for two or three weeks if it be intended to plant them for affording fruit in the autumn. They may be also turned out of the pots, a portion of the soil shaken off the balls, and repotted into the same or slightly larger pots, and stood in the open air, placing them again in the frames when the second crop of fruit is formed, so as to ripen it perfectly.

Preparations for Grafting.—Owing to the cold character of the season, grafting will not call for immediate attention, excepting in getting everything required in readiness for starting operations when the sap begins to flow freely. If but little grafting is going to be carried out, clay should be the first thing to prepare—this should be as pure as it can be obtained, and free from stones; it should be sprinkled with water, and pugged to make it workable, and of a regular consistency, and should be mixed with hay-chaff cut to $\frac{1}{2}$ -inch lengths, or failing that, with horse dung. When fully prepared, let the heap be covered with sacking, so as to keep the moisture in it. If grafting-wax be used, this should be obtained from the florist's or made at home. For larger grafting operations in private gardens, it is advisable to make use of grafting-wax in place of clay, it being more easily applied and, unlike clay, it is not liable to crack, and requires, therefore, no after attention. Apple and Pear-trees of indifferent varieties, or which it is desired to graft with some approved varieties, should be headed back to within a little distance of the point at which grafts will be inserted. Aged trees if healthy may, by grafting several of the main branches, be quickly brought into a bearing state, and furnished with good crowns in less time than if young trees were substituted for them.

Miscellaneous.—The recent dry weather will have enabled all deferred planting to be carried out, especially on land that has hitherto been in an unworkable state. All pruning operations

should be finished without more delay, and the nailing of trees and cleaning up finished. In the garden, land upon which Apple and other fruit-trees are growing, should be lightly forked over; but at the middle distance between the trees it may be dug sufficiently deep to enable leaves and weeds to be turned in. Wall-trees, borders, and more especially where there are aged trees that may have carried heavy crops of fruit in recent years, may be afforded diluted liquid-manure, and water copiously applied to those parts near to the walls which are apt to get very dry. To do this affords an opportunity of emptying cess-pools and manure-water tanks, of which the contents may be running to waste.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. I. MEASURES, Esq.,
Cambridge Lodge, Flodden Road, Camberwell.

***Epidendrum vitellinum* (late flowering variety).**—This will be found one of the most desirable re-introductions we have had of late years. The variety *E. v. majus* is well known, and the small-flowered variety, which is generally despised when brought into comparison with the *majus* variety, is scarcely worth growing. The re-introduced variety is equal in every way to the *majus* form, but differs altogether in the season of flowering, which occurs in late autumn and winter. Its long racemes of brilliant orange-scarlet flowers are most useful for cut flower purposes. Although they need to be cultivated in the cool Orchid-house, they require more light than is generally considered sufficient for *Odontoglossums* and other cool-house species. Afford the plants a liberal supply of moisture at the roots during the growing season and until the flowers have been removed, after which they will need sufficient only to keep the pseudo-bulbs in a plump condition. Thoroughly clean newly-imported plants from dead and decaying matter, and pot them into well-drained pots, just sufficiently large to contain the plants comfortably. Afford a liberal amount of water as soon as the plants have commenced to grow.

Evergreen *Dendrobiums*. now developing their flower-buds, should be removed from their resting quarters to more warm and humid conditions. This section of *Dendrobiums* is not so extensively cultivated as it was a few years ago, and one rarely meets with large specimen plants. But I think they are worthy, in most cases, of consideration, as they form a good link in the chain that provides a succession of flowers throughout the year, and they may be used for decorative purposes in the house without fear of injury under ordinary care. The process of potting should be delayed until after the plants have flowered.

***Saccolabiums* and *Rhynchostylis*.**—If the sphagnum-moss was removed from these plants during the winter, fresh material should be afforded them now, and if any require new compost, the same may be afforded. *Saccolabiums* and *Rhynchostylis*, I find, succeed better when suspended than when grown on the stage.

***Vanda Parishii* and its variety *V. P. Marriottiana*.** are developing their flower-spikes, and require a moderate amount of moisture at the roots. I find they succeed best in baskets, and suspended near the roof-glass. Afford good drainage, and use only living sphagnum-moss for a rooting medium.

***Calanthes*.**—Those *Calanthes* which have been rested since they ceased to flower, although generally in a backward state, will now be recommencing growth. Those species which flower in the winter are not suitable plants to be grown where town fogs are prevalent at that season, although they are among the most useful of winter-flowering Orchids under more favourable conditions. The *C. vestita* class and the various crosses of *C. Veitchii* are, perhaps, more successfully and more generally grown than any other Orchids. The whole of the exhausted compost as well as all dead material should be removed from the old pseudo-bulbs, and scale insects lurking at the base cleared away. The sizes of the pots into which the pseudo-bulbs are put should be determined by the size of the latter, and the number which it is intended shall be grown together in a pot. The drainage should consist of clean crocks, and be ample in quantity. The compost may consist of fibrous-loam two-thirds, the remaining third being made up of good leaf-soil, dried cow-dung rubbed through a half inch meshed sieve, and a liberal addition of broken charcoal or rough sand, the

whole being intimately mixed together. Let the potting be done with a moderate degree of firmness, and the base of each bulb placed slightly below the surface when the latter is finished off. Being potted, place the plants in the plant stove or similar warm house, affording not any water, the humidity of the atmosphere being sufficient till new growth has got well away from the base and the roots have appeared. At that period they should be afforded water in limited quantity only till the pseudo-bulbs have become re-established.

THE FLOWER GARDEN.

By T. H. SLADE, Gardener to Lord POLTIMORE, Poltmore Park, Exeter.

Shrubberies.—The soil should be slightly dug with forks, burying weeds and rubbish whenever this can be done without injury to the roots. The required pruning should be done before the soil is dug. *Laurustinus*, and other shrubs that flower early, should be pruned after flowering is over. Vacant places in the shrubberies should be suitably prepared for other shrubs, or for Cannas, *Hollyhocks*, *Dahlias*, *Nicotiana sylvestris*, various sub-tropicals, &c., as temporary occupants. Where such subjects are planted in groups, sufficient space should be afforded to permit of full development, and the plants in all cases should be strong ones when put out; otherwise half the season has passed before they make any telling effect.

Cortaderia (Gynerium) argentea.—The Pampas Grass and its allies should now have the dead leaves and the remains of the inflorescences removed, and the mass of living leaves cut to a conical shape with a pair of hedge shears. These plants thrive in most situations if protected or sheltered from the colder winds, but produce the finest plumes when planted near a stream or in moist places, and in heavy loam; where in such positions and soil, they form large clumps in a short period of time. Plants which have become thin in the middle should be lifted, split up, and the healthiest and best pieces re-planted in deeply-trenched ground in the present month.

Ecremocarpus scaber.—This quick-growing perennial is useful to clothe parts of the rockery, tree-stumps, walls and fences. If seed be sown in heat this month, and the plants pricked off and grown on in a little warmth, strong plants will be fit for planting in June. The position should be sunny and fairly dry, otherwise the tops will die back in the winter. When this occurs, the plants soon start from the bottom in the spring. Generally it is found advisable to protect the root-stock with coal-ashes, tan, &c. With a little assistance the young plant soon clings to the object against which it is planted, and their orange-coloured flowers appear in profusion in due time.

Hollyhocks.—Where these plants can be grown with a fair measure of success, few plants equal them in effect in beds and borders that are sheltered from strong winds. Although sometimes propagated from cuttings, buds, and divisions of the roots, seedlings answer very well for ordinary purposes, having more vigour than those. The plants and seedlings raised in the autumn of last year may be planted out this month where they are intended to flower, the ground being heavily manured and trenched. In retentive soils *Hollyhocks* should be lifted in the autumn, divided, potted, and wintered in frames. Seed should be sown each year in August, and the seedlings wintered in frames, and after flowering dug up and thrown away.

Gladiolus.—If the beds or stations these plants will occupy have been manured and dug, lightly stir the surface with a digging-fork, and plant the corms when the soil is in a dry, workable state. *G. Breuchleyensis* and *G. gandavensis* in variety, and the new *G. Nanceianus* and *G. Lemoinei* are all beautiful. The corms should be placed 4 inches below the surface, and not less than 1 foot apart, and if in rows these should be 1½ foot asunder. Some light, sifted soil—the refuse from the potting-bench will do—should be put around them. If many are grown, let a portion of the stock of corms be planted forthwith, and the remainder a fortnight later. *Gladiolus* look effective in clumps in borders of herbaceous perennials, in the fronts of shrubberies, and between hardy *Azaleas* and *Rhododendrons*, affording flowers when these shrubs have passed out of bloom. Corms may be potted for this and

other purposes if the stations are not ready for their reception, it not being advisable to keep them out of the soil much longer.

Delphiniums.—Lift and divide when the plants have made a few inches of growth.

Shrubby Phloxes may be increased similarly and re-planted. They do best in moist soil, but if copiously watered in hot weather the plants succeed anywhere. Retain only the outside parts of clumps. Not all the stems should be left for flowering, but only the strongest, the others being cut away in June. *P. variegata* (white and green) is a useful pot plant, and the flower light pink.

FRUITS UNDER GLASS.

By MALCOLM MCINTYRE, Gardener to Sir CHAS. TENNANT, The Glen, Innerleithen, Peeblesshire.

Peaches and Nectarines.—As regards the earliest houses, there should be no attempt made to force them over much whilst the fruit is stoning, maintaining the temperature at 70° to 75° by day with sun-heat, and about 65° in dull weather, avoiding sudden fluctuations. Regulate the growths, and tie-in the shoots for next year's fruiting as they advance, affording plenty of room for growth of foliage, and generally avoid crowding the shoots, or the fruit will be small, and less well exposed to the sun, and the wood less well ripened. Shoots of more than 14 inches in length that are not extension shoots may have their points pinched out. When thinning the fruit, a considerable number should be left on the trees to compensate against losses by dropping whilst stoning. The number to be left finally for a good crop depends upon the age and vigour of the trees, and also on the state of the roots. It should be remembered that a heavy crop sometimes does more good than harm to trees of unusual vigour, and excess of vigour is certain to cause buds to drop in the spring when stoning is past, a stage which may be ascertained by cutting a few fruits with a knife. The fruits will require regulating after the swelling period. As I have said, vigorous trees may be allowed to carry many more fruits than those that make weak growth, but it is better to err on the safe side, and not unnecessarily to tax the energies of the most vigorous trees. Borders inside of the houses must be properly moistened, weak trees being afforded liquid-manure and a mulch of partially-decayed stable-manure. One fruit per square foot of leaf-surface is a middling crop, but many strong young trees will safely perfect a fruit to every square of 8 inches. Seeing how much more taking are highly-coloured Peaches and Nectarines than pale ones, the gardener should leave as many of the fruit as he can on the upper sides of the branches and the trellis, while those on wall trees should face outwardly, and all leaves shading the fruit when ripening should be removed or put aside.

Trees started early in January.—The weather has been unfavourable for the swelling of the fruits, but as it becomes more genial, progress will be rapid, and in the case of these trees the stoning process will be commencing. Avoid check to growth by careless ventilation, remembering that the admission of cold air by day causes excessive evaporation, and a too high temperature at night is injurious by reason of affording the trees no rest.

Trees started in February.—These have not advanced rapidly, and this season they are at the least a week later than usual. With the advent of brighter weather, the leaves will acquire firmer texture and deeper colour. The set of fruit and its development being satisfactory on every tree in the house, lightly syringe them so as to remove the remains of the flowers, and very lightly indeed in cold, unless weather. This is all that is needed until the first leaves attain to nearly their full size. Maintain a temperature at night of 55° or 60° in mild weather, ventilating when it reaches 65°, and allowing an advance from sun-heat to 70° or 75°, with free or full ventilation.

Thinning the Crops.—It is an error in practice to delay the thinning Peach and Nectarine fruits after it can be ascertained which are truly set. Remove first the smallest fruits, then those under or at the back of the trellis, and always make a beginning with the weaker parts of the trees, for on the weakest shoots the fruit sets more thickly, and thin them proportionately more severely than on the stronger wood, which will have a tendency to equalise the flow of sap. The first thinning should be made when the fruit is the size of Horse-Beans;

the second when of the size of marbles, when very few more should be left than will be required for a crop; looking over the fruits again when they are the size of Walnuts, and very few indeed over the intended crop should then be left, though there should always be a few to meet unavoidable losses.

Tying in the Shoots.—When the shoots are sufficiently advanced, and before they extend across the wires of the trellis so as to be in danger of breakage in bringing them into proper position, tie them carefully to the trellis, not bringing them down too sharply. In securing the shoots, take care to leave sufficient space to allow for growth, and to avoid abrasion of the rind, a prolific cause of "gumming."

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bicton, East Budleigh, Devonshire.

Celery and Leeks.—If the ground now carrying these crops is required for growing crops of Peas, Carrots, &c., let the plants be lifted with as much soil as will cling to the roots, and laid in on a north border. They will remain fit for use for some time longer.

General Remarks.—Manure and dig vacant ground, ply the Dutch-hoe amongst Cabbages, Lettuces, Spinach, &c. In fine weather relay and repair Box edgings; indeed, Box edgings should be relaid every three or four years in order to prevent them becoming a covert for slugs and snails, to the detriment of all kinds of crops.

Borecole and Savoys.—Seeds should now be sown in drills drawn at about 10 inches apart, and again in about fourteen days.

Broccoli.—A general sowing can now be made in the above manner. Here, the late varieties, *Model*, *Leamington*, *Late Queen*, *Ledsham*, &c., are sown at the end of April; but this sowing is only applicable to the warmer counties. Plants on which heads are now forming, should have a few leaves bent down over the curd, as a protection from frost, and to keep it white. *Broccoli* (*Leamington*) is now affording good heads; it is a useful, very hardy variety, and should be planted in every garden.

Cauliflower.—The plants which have stood over the winter in pits or frames will be the better for being planted within the next ten days or so, providing the weather becomes milder, and the plants have been well hardened off, otherwise it will be advisable to defer planting for a week or longer time. Before removing them, apply water to the plants, and wait for a few days. Lift them with trowel, and squeeze the balls of soil together gently. Let furrows be drawn about 6 inches deep, and place the plants in them at 15 to 18 inches apart, according to varieties, and afford water in the morning early if the soil be dry. The land for this early crop should be well manured, deeply dug, and sheltered on the north and east. Keep a watch on slugs, and sprinkle quicklime late in the evening on the soil if they do any injury to the plants.

Vegetable-Marrows.—Seeds may now be sown for raising plants for early crops, placing two seeds each in 4-inch pots, shifting into 6-inch ones before they get pot-bound; place in a Cucumber-frame, or where there is a gentle warmth, and when true leaves appear on the plants, remove them to cooler quarters. Sow again towards the end of the month. The *Long White*, and *Moore's Vegetable Cream* are desirable varieties. [Do not omit to sow the *Custard*. Ed.]

Brussels Sprouts.—Prick out the plants from early sowings at 4 inches apart into frames or cold pits. The plot selected for this vegetable should be well manured and deeply dug. Plants which have yielded the winter supply are now being dug up here, and the ground got in readiness by manuring and digging for planting with early Potatoes.

Forcing Department.—Much care will be necessary in affording air to Carrots, Radish, Turnips, Lettuce, Asparagus, &c., on hot-beds, when the wind is north. Tilting the lights at the bottom if facing south, is the wisest plan, closing them at about 3.30 P.M. Put another batch of Asparagus-roots into the hot-bed frame, and if a couple or three lights in a brick-pit can be spared for a number of the roots, the supply would last until the outdoor crop comes in. Attend to the linings of frames; also the covering at night—both important items.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturalists.

Letters for Publication, as well as queries and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

APPOINTMENTS FOR THE ENSUING WEEK.

SUNDAY, APRIL 7	Horticultural Exhibition, at Mont St. Amand, Ghent, Belgium, by the Ligue Horticole (3 days).
TUESDAY, APRIL 9	Royal Horticultural Society's Committee, at Drill Hall (Daffodil competition). Durham, Northumberland, and Newcastle Botanical and Horticultural Society's Show. Rose Congress at Nice, in the Palais d'Agriculture.
WEDNESDAY, APRIL 10	Shropshire Horticultural Society's Spring Show, at Shrewsbury.
THURSDAY, APRIL 11	Cornwall Daffodil and Spring Flower Society's Show, at Truro (2 days).

SALES.

WEDNESDAY, APRIL 10.—Roses, Continental Plants, Gladioli, Carnations, Hardy Perennials, &c., at Protheroe & Morris' Rooms.
FRIDAY, APRIL 12.—Imported and Established Orchids, Standard and Dwarf Roses, Stove and Greenhouse Plants, Lilies, &c., at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—47° 3'.

ACTUAL TEMPERATURES:—

LONDON.—April 2 (6 P.M.): Max. 55°; Min. 38°.

April 3 (11 A.M.):—Dull, showery, warmer.

PROVINCES.—April 2 (6 P.M.): Max. 50°; [S.W. Ireland; Min., 41°; N.E. Scotland.

Mistletoe and
Dodder.

SOME very interesting facts have lately been brought to light by M.

LAURENT, Professor at the State School of Agriculture at Gembloux, Belgium, relating to the dispersion of the Mistletoe (*Viscum*) and the Dodder (*Cuscuta*).

Both these plants are parasitic, and must get their mineral food, not directly from the soil, but indirectly from the plants on which they grow. The Mistletoe, with its ample leafage, can avail itself of the advantages provided by sunlight and air, and to that extent is less dependent than is the Dodder. Everyone must have noticed, especially in the case of the Mistletoe, how abundant it is in some localities, how rare it is in others. With a view to ascertain the causes of these differences, M. LAURENT has made a minute investigation as to the occurrence of the Mistletoe in the various provinces of Belgium, and from a very large number of ascertained facts, deduces the conclusion that, speaking generally, the Mistletoe abounds in districts where the soil, as shown by analysis, is of a calcareous nature.

In the sands of Limburg, or in the peat and heaths of the Ardennes, the Mistletoe is rare, or does not exist at all. It will give some notion of the extent of M. LAURENT's enquiry if we mention that he cites the names of no fewer than 122 different plants, upon which Mistletoe has been found a larger number than most of

us were aware of. Certain genera seem to be immune from infection by Mistletoe. Experiments in inoculation have been tried without success by various botanists in *Calycanthus*, *Berberis*, *Laurus*, *Daphne*, *Hippophae*, *Rhus*, *Euonymus*, *Spiraea*, *Genista*, *Spartium*, *Ulex*, *Aucuba*, *Viurnum*, *Lonicera*, and *Ligustrum*. M. LAURENT enters into detail as to the culture of the parasite on various plants, and points out how in the case of the Pear, the berries exert a poisonous influence on the bark causing its death (necrosis), drying up of the young shoots, and finally the death of the whole branch.

The Dodder, like the Mistletoe, is clearly a lime-loving plant. It is also stimulated by nitrogenous manures, but is checked when the Clover on which it thrives is growing on a soil rich in phosphoric acid.

OUR SUPPLEMENTARY ILLUSTRATION.—The more genial weather that has prevailed since the advent of April, encourages the hope that the beautiful and hardy-flowering plants we usually call "Alpines," will soon make our rockeries gay with their brightly-coloured blossoms. We have reproduced in a Supplement to our present issue a photograph taken last year in the nurseries of Messrs. R. SMITH & Co., Worcester, when the rockery was looking its best. Messrs. SMITH's rockery was made some four years ago, and it has been planted with a great variety of species, most of which have grown very satisfactorily. The following plants are represented in our illustration:—*Arenaria Balearica*, growing in out-of-the-way corners and crevices; *Prunella grandiflora*, *Onosma tauricum*, growing remarkably well; *Asperula suberosa*, a rare plant, that flourishes when wedged between stones; *Primula nivalis* and *P. citrata purpurea*, in the more shady positions; *Androsace vitallina*, *Dianthus alpinus*, *Anthemis Biebersteiniana*, producing large yellow flowers and silver foliage; *Arenaria grandiflora*, *Prunella Webbiana*, true; *Lithospermum graminifolium*, *Aethionema grandiflora*, *Genista tinctoria plena*, *Phlox Nelsoni*, *Saponaria caespitosa*, *Lithospermum prostratum*, which flowers very freely in nearly every month of the year; *Campanula garganica hirsuta*, *C. pulla*, *C. x G. F. Wilson*, and *C. mollis*; *Gnaphalium grandiceps*, a rare and distinct plant; *Potentilla nitida*, *Edrianthus dalmaticus* and *E. serpyllifolius*, *Corydalis lutea*, *Astragalus hypoglottis albus*, *Pteroccephalus* (*Scabiosa*) *Parnassii*, *Gentiana septemfida oordifolia*, *Dryas octopetala*, *Statice tartarica*, *Acantholium glumaceum* var. *acerosum*, *Iberis Little Gem*, *Heuchera brizoides*, and *Geranium argenteum*. Messrs. SMITH inform us their collection of alpine plants in pots includes something like 100,000 specimens.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees will be held on Tuesday, April 9, in the Drill Hall, Buckingham Gate, Westminster. Special prizes will be offered for Daffodils. A lecture on "Some of the Plants Exhibited" will be given by the Rev. Prof. G. HENSLOW, M.A., &c.

—At a general meeting of the Society held on Tuesday, March 26, forty-two new Fellows were elected, amongst them being Lady ROSAMUND CHRISTIE, Lady R. GIPPS, Gen. Sir REG. GIPPS, K.C.B.; Rev. HENRY SWANN, CHAS. J. BILLSON, M.A.; W. H. MYERS, M.P.; and Mrs. GORE LANGTON.

ROSE SHOW FIXTURES.—Additional information as to the dates of Rose shows is kindly forwarded by Mr. ED. MAWLEY, viz., Tuesday, July 2, Hereford; Wednesday, July 3, Farnham; Wednesday, July 10, Formby, Lancs.; Tuesday, July 16, Kidderminster. In previous notice, Stambridge (Essex) should read Great Stambridge, &c.

THE SURVEYORS' INSTITUTION.—The next ordinary general meeting will be held in the Lecture Hall of the Institution on Monday, April 15, when a paper will be read by Mr. WALTER C. RYDE (Associate), entitled "The Rating of Public-Houses." The chair will be taken at eight o'clock.

PARIS CHRYSANTHEMUM CONFERENCE.—The January and February issues of *Le Chrysanthème* contain a special account of the Chrysanthemum Conference held in Paris on November 3 last, with verbatim text of the papers read on that occasion, and of the discussion that ensued upon them. In the issue for the month of February we notice the list of officers and members of the French National Chrysanthemum Society, a list that speaks volumes for the energy and enthusiasm that is being put into the Society's work.

TUNBRIDGE WELLS HORTICULTURAL SOCIETY.—After some discussion it was resolved on Wednesday last that the Society, which has a balance in hand of £34, should hold its exhibition in the Great Hall and Calverley Hotel Grounds on Wednesday, July 10. With its many advantages "The Wells" ought to secure an excellent show and a large attendance.

THE THREE HUNDRED BEST ROSES.—The German Society of Rosarians (Verein Deutscher Rosenfreunde), has published a list of three hundred of the best Roses in the various classes.

EFFECT OF A STRIKE ON GARDENING.—There has been a strike among the dockers of Marseilles—the men engaged in loading and unloading the ships arriving at and departing from that port—and the growers of vegetables, &c., in Corsica have been forced to suffer sadly from this circumstance. The peasants of the island, unable to dispose of their early crops that ripen at this season, have allowed them to rot. At Ajaccio, the other day, quantities of fruit and vegetables intended for Marseilles, Lyons and Paris, were thrown into the sea. The extent of the disaster may be gauged by the fact that in whole districts of Corsica the peasants will be unable to pay any rent this year. In Paris the restaurants have been unpleasantly affected—the Algerian vegetables were noticeable through their absence; and instead of new Potatoes being served with fish or steak, we are told that old Potatoes have been used and cut so as to resemble the new. The "Haricots verts nouveaux" are only the tinned ones of last year.

MR. ALFRED COCKERILL, florist, fruiterer, and seedsman, in Northampton, has been elected an alderman of the Northamptonshire County Council. Mr. COCKERILL has for many years been treasurer of the Northamptonshire Horticultural Society.

APPLES FROM THE ANTIPODES, ETC.—Messrs. ANDERSON, of the Orient line of steamers, notify us of the fact that the ships *Austral* and *Britannia* are now en route for Tilbury, the first with 23,000 and the latter with 16,500 boxes of Apples on board—a total of 39,500 boxes. The *Dunvegan Castle*, of the Union Castle line, arrived at Southampton on Saturday, March 30, from Cape Town, bringing 610 cases of Grapes, and two of Tomatos.

THE BIOLOGICAL CHARACTERS OF EPIPHYTIC PLANTS.—Professor J. B. FARMER, M.A., F.R.S., is announced to give two lectures on this subject on Saturdays, June 1 and 8, at the Royal Institution.

MR. G. SCHNEIDER.—A farewell evening party, organised and presided over by Mr. JOHN HEAL, V.M.H., consisting of the members of the staff of the Royal Exotic Nurseries, Chelsea, to meet their retiring colleague, and to present him with a suitable souvenir, took place on March 29, and left a very pleasant impression on the minds of all who took part in it. For more than thirty years the Fern department in Messrs. J. VEITCH & SONS' nurseries had been an important one, but, owing to the extensive alterations now in progress

there, Fern and other plant-houses are gradually making place for dwelling-houses, and the noted Fern-grower, and author of the *Book of Choice Ferns*, finds that his services are not required any longer. His late colleagues seized the occasion of his retirement to show the good feeling which exists amongst the members of the staff, and also their appreciation of the qualities of their late colleague. In accepting the present, Mr. SCHNEIDER, who was deeply moved, stated in a short speech all the gratitude he felt for that mark of sympathy, as also for the thoroughly genuine support which he always received from all his fellow-workers during his long tenure of office of thirty years' standing.

MR. JAMES WILKINS, the noted Vine-grower, who for thirty-five years had charge of the vineries at Chelsea, and who is well known in every part of the country, shared the honours of the evening with Mr. SCHNEIDER. His late colleagues likewise presented him with a suitable souvenir, to which he attaches great value. After many years of active service, he retires into private life, whereas Mr. SCHNEIDER, we are informed, has undertaken the representation in this country of several French growers of high standing in their respective specialties. He has our best wishes for success in his new undertaking.

FLOWERS IN SEASON.—We have received some very pretty Cineraria flowers from Messrs. W. CLIBBON & SON, of the Oldfield Nurseries, Altrincham, the colours of which are particularly good. The self colours include rose, pure white, several shades of purple, and a strikingly intense crimson maroon. The other flowers have white centres around the disc, and a band of maroon, purple, rose or crimson on the extremities of the petals. Collectively, the specimens illustrate a strain of much merit from the point of view of the florist, and although Cinerarias fail to call forth our highest appreciation, it cannot be denied that well-cultivated plants of such a strain are capable of producing a gorgeous display of colour in the conservatory in April. But the plants should be kept clean as these have been; an aphid-infested Cineraria is an abomination.

CHRYSANTHEMUM RUST.—In a paper read before the French Society of Chrysanthemum Growers, and published in their journal for February of the present year, M. THIRIAT observes that his plants raised from cuttings in April are only slightly attacked with the rust, whilst those plants raised from cuttings struck in January and February are the most severely attacked. He considers that preventive measures are less efficacious than those which tend to increase the health and vigour of the plants. Plenty of air and abundance of sunlight are essentials. M. CHANTRIER recommends in the same publication the application of a solution of potassium pentasulphide (liver of sulphur), which checks but does not cure the disease. The quantity used is 300 grammes to 200 litres of water.

DROITWICH.—We have before us the fifth annual report of the experimental garden at Droitwich established under the auspices of the Worcestershire County Council, and directed by Mr. JAMES UDALE. Vegetables and fruits are grown under the influence of various manures, and with no manure at all. The details of the various experiments and observations are given in a series of tables, which are worthy of the most careful study. The pamphlet is not a large one, but it bears ample testimony to the ability of Mr. UDALE, and as regards results, is most promising. It is very gratifying to us, who so persistently urged the adoption of some such schemes in past years, to find that the County Councils and their officials are now taking the matter up so satisfactorily.

IPOMOEAS.—The *Garten Welt* for March gives a coloured plate showing the extraordinary variations which occur in the foliage and in the flowers of these plants as cultivated in Japan. The leaves

vary from cordate ovate entire, to deeply palmately-lobed, with all sorts of intermediates. In like manner, the ordinary funnel-shaped corolla is split up into numerous entire or lacinate segments.

APPLE KING OF TOMKINS' COUNTY.—This favourite American Apple is destined, it appears, to receive many synonyms, such as King of Jaakin's County, King Apple, Tom's Red, Tommy Red, Roi du Tompkins, Tompink's County King, Tompkins' King, &c.

THE PRESERVATION OF FRUIT.—A new process for keeping fruit fresh and unchanged for considerable periods of time is now being introduced into this country from America by the Lawton Patents (Limited), of 57B, Hatton Garden. The desired end it is sought to attain by sterilising the atmosphere in which the fruits are stored, and depriving it of most of its oxygen. For this purpose they are placed in an air-tight chamber lined with non-conducting material, in order that its temperature may remain uniform, and filled with air which, after passing through a mass of wool soaked with brine, has been blown through coke at red heat. The gaseous mixture thus produced, consisting mainly of nitrogen with carbonic oxide, carbonic acid, and a small percentage of chlorine, is freed from sulphur and moisture by suitable purifying agents, and, after being cooled, is pumped into the chamber, where the fruits are submitted to its action for a period varying from twelve to thirty-six hours, but usually about twenty-four. At the end of that time moisture will be found to have developed in the atmosphere of the chamber; this must be removed by the use of the purifying apparatus just mentioned, and if it accumulates again—means are provided for its detection—the drying process must be repeated. Ripe fruit, it is claimed, can in this way be kept unchanged for so long a time as to admit of its being imported from distant countries in perfect condition; and, moreover, it is said that it will remain good, after removal from the apparatus, longer than fruit which has undergone the usual refrigerative treatment. It may, therefore, be picked properly ripe, instead of half-green, as is usually necessary with present arrangements. If, however, ripening is required during transport by the Lawton process, it can be effected by admitting more oxygen to the chamber. The opening took place at the offices of the company, of a chamber into which various fruits, including Grapes, Bananas, and Tomatos, were sealed three weeks ago. The Bananas, which were hard and green when put in, appeared substantially unchanged; Grapes, which had been hung up in a bunch, were firm and juicy, presenting a marked contrast to some mouldy, dried-up specimens which were the remains of a similar sample hung up at the same time, but not in the apparatus; while the ripe Tomatos were also in excellent condition, except for some slight signs of wizening at the point where they had rested on the shelves of the chamber. *Times*.

DUTCH HORTICULTURAL AND BOTANICAL SOCIETY.—Floral Committee:—On the occasion of the meeting of March 13, 1901, the committee awarded First-class Certificates to Mr. P. W. VOET, of Overveen, for Hyacinthus Madame Borski and Iris persica Heldreichi (stenophylla); a Certificate of Merit to Messrs. D. NIEUWENHUIS & SON, of Lisse, for Narcissus poeticus ornatus King Edward VII.; a Botanical Certificate to Mr. H. D. WILLINK VAN COLLEN, of Breukelen, for Greya Sutherlandi. A Silver Medal was awarded to Mr. H. C. HACKE, of Baarn, for Vriesia hieroglyphica. H. C. Zwart, Secretary, Amsterdam, March, 1901.

SHADY TREES IN THE STRAND.—At a recent meeting of the Westminster City Council it was reported that a letter had been received from the London County Council stating that, in executing the necessary works for the widening of the Strand around the churchyard of St. Clement Danes, they would be prepared to arrange for the planting of

trees on the northern footway, and asking the views of the City Council in the matter. The offer was accepted, and several members expressed the hope that the new Strand might henceforth be provided with a line of shady trees from end to end. May we live to see it!

EUCALYPTUS RESINIFERA.—Some two years ago, in the course of some most interesting and luminous letters from Rome, the Rev. H. EWBANK told us that the Italian authorities recommended this species as the hardest and most reliable of the species. Mr. EWBANK obtained seed, distributed some and grew others. Five young seedlings were planted out last year near Ryde, Isle of Wight, and all five have so far got through the winter safely without any protection, whilst E. ficifolia, on which great hopes had been based, has been severely injured by frost.

BOTANICAL GARDENS: THEIR VALUE IN EDUCATION.—The Rev. W. TUCKWELL has a paper on this subject in *The Parents' Review*. After sketching the history of botanic gardens in general, he mentions sympathetically the Botanic Garden at Oxford, "loveliest perhaps of all the lovely spots in lovely Oxford," and the old Physic Garden at Chelsea, lately remodelled by Mr. HALES, the curator. The writer then goes on to narrate how he introduced botanical teaching into Taunton School with such success that there are [were] no dunces in the school, and that the effect on the boy's character is beyond all dispute. In after years, as an examiner, Mr. TUCKWELL had the opportunity of laying out several small school gardens in various parts of the country, and stocking them with appropriate plants. Finally, in the following words he shows how his views may be carried out in practice:—"Well, then, parents and teachers, who wish to stimulate, educate, awaken, charm your children, I have tried to give you out of my long experience a plan which meets the case. You will ask me how you are to set about it. That is a fair question. Witty Dean MANSEL used to say, that if a man cannot be definite, he had better be dumb-in-it—so here are definite suggestions. First, set aside a piece of ground in garden or adjoining field, the more the better, but a small piece will serve. I once laid out for some girls in their father's garden, a border against a wall, 12 by 3 yards in extent, and put into it more than 100 plants. Divide into beds not less than 2 feet wide, severed by paths 18 inches wide, of gravel or of ashes, not of grass. This is a minimum; give rather more width to both if you can afford it. Then put in your plants 2 feet apart, be sure that all are named on labels 8 inches long, writing the names, Latin on one side, English on the other, from the blunt end of the label, and mark with larger labels the beginning of a fresh order. Now get OLIVER'S *Elementary Botany* and ANNE PRATT'S *Flowers of the Field*. The first will tell you, with much more besides, the genera which each order contains, the second will identify flowers gathered in your children's walks. Then take the accompanying Table of Orders as a guide for planting, observing that the more important orders are printed in italics. Finally, if you adopt my plan, and I can be of any further service, do not fail to write to—Your veteran well-wisher, W. Tuckwell."

RETAIL FRUIT AND VEGETABLE TRADE.—A meeting of the Edinburgh retail fruit and vegetable trade was held recently at 5, St. Andrew Square, Edinburgh. Mr. ALEXANDER KNOX presided over a large attendance. The chairman explained that the main object of the meeting was to consider a proposal on the part of the market gardeners to do away with a custom which has been in operation from time immemorial—that of giving fourteen to the dozen. He thought the gardeners should have consulted the trade before adopting such a proposal, and seen whether they would agree to it or not, because the trade supported them. His opinion was, that such an arrangement would soon break down. No one could expect to get the same price for twelve as

for fourteen, and in any case the trade should see that if in the future they only got twelve to the dozen, they paid accordingly. Mr. MURIE having observed that the market gardeners were not unanimous in the matter, said that if the trade took a firm stand, and would not take "twelve to the dozen," they would carry the day. The Glasgow men were all on their side, and he moved that they buy only from those who give "fourteen to the dozen." Mr. CARRICK seconded, and the motion was adopted unanimously, arrangements being made to bring the resolution before the market gardeners. D. T. F.

"THE AGRICULTURAL GAZETTE OF NEW SOUTH WALES."—This thriving colonial contemporary marked the beginning of a new century by the publication of a Federation number, bulky with letter-press and illustrations. The object of this issue is to "provide its readers with an opportunity of becoming conversant with many particulars connected with the remarkable and interesting history of the foundation of our agriculture and its gradual development and progress, and, to some extent, that of the great pastoral industry." Mr. W. S. CAMPBELL furnishes the leading chapter, entitled, "From Colony to Commonwealth," and the remaining contents, as indicated, are also a record of constant progress. Many portraits are given of those foremost in the work.

CENSUS OF FRUIT TREES IN GERMANY.—There were existing on December 1, 1900, in Prussia, 90,220,375 fruit-trees. Of this enormous total, the percentage as regarded Apples, Pears, Plums, and Cherries, was in East Prussia, 4.03; West Prussia, 3.61; the Berlin circuit, 0.02; Brandenburg, 11.98; Pomerania, 4.03; Posen, 5.31; Silesia, 13.15; Saxony, 16.36; Schleswig Holstein, 2.67; Hanover, 10.57; Westphalia, 6.62; Hesse Nassau, 7.44; Rheinland, 13.83; and Hohenzollern, 0.38. According to this count, the cultivation of fruit stands on a very low footing in the eastern and northern provinces; whilst Saxony, Rheinland, Silesia, Brandenburg, and Hanover, show the most development, with the proviso of a later specification of the kinds of fruit grown.

THE SOUTHERN COUNTIES CARNATION SOCIETY has just issued its third annual report for 1900, from which it appears that the subscriptions and donations during the year amounted to the sum of £87 13s. In prize money a sum of £68 5s. 6d. was disbursed. The next show of the Society will be held on the Royal Pier, at Southampton, on July 24. There are twenty-five classes for Carnations, and a few for Sweet Peas. The little pamphlet containing the report, also includes short essays upon interesting subjects appertaining to the cultivation and exhibition of Carnations. The secretary is Mr. W. GARTON, Jr., York Buildings, Southampton.

THE SCILLY ISLES.—It is reported that on Tuesday last, no fewer than 33 tons of flowers, principally Narcissus, were despatched from Penzance to London and other large towns.

PUBLICATIONS RECEIVED.—*The Tropical Agriculturist*, February. Full, as usual, of articles and paragraphs of a suitable nature for the use of planters in tropical countries.—*The Agricultural Journal, Cape of Good Hope*, Jan. 31. With articles on: Crops, Stock-farming and Veterinary, Horticultural, and miscellaneous information.—*Buletino della Società Botanica Italiana*, Gennaio. —*Nuova Giornale Botanico Italiano*, Gennaio, vol. viii., No. 1.—From the New York Agricultural Experiment Station: *Bulletins* No. 179, *An Anthracnose and a Stem Rot of the Cultivated Snapdragon*, by F. C. Stewart; No. 180, *Miscellaneous Notes on Injurious Insects*, by V. H. Lowe; and No. 181, *Humigator for Small Orchard Trees*, by V. H. Lowe.—*The Botanical Gazette* (Chicago, Ill.), February.—*Native Guano*. Results of its practical application in the farm and garden: 1901 (29, New Bridge Street, Blackfriars, E.C.).—*Alpine Plants*, by W. A. Clark (London: Upcott Gill).—*A Garden of Simples*, by Martha Bockée Flint (London: David Nutt).—*North American Forests*

and Forestry, by Ernest Bruncken (C. P. Putnam's Sons, London).—*Cours de Botanique*, par MM. Gaston, Bonnier, and Leclerc du Sablon.—*West Indian Bulletin*, vol. ii., No. 1.—*Souvenir of the Siege of Mafeking*, published by Jno. Lewis & Co., 5, Bridewell Place, London, E.C., price 6d., being a reproduction of the general orders issued during the siege, and written on a Smith Premier Type-writer.—*The Society of St. George*. Report of the General Committee, 1900. The object of the Society is "to encourage the formation of English County Associations, and they in their turn should unite under the aegis of St. George to bring about the general observance of England's Day, not only at home but throughout the Empire." How "The Day" is to be observed, except by wearing red and white Roses, attending religious services and social dinners, and hoisting the St. George's flag, is not made very clear, but as loyalty and patriotism are the final aims, no doubt the Society is well-intentioned (Offices, 241, Shaftesbury Avenue).—*Guernsey Growers' Associations' Year Book*. A record of progress; and contains also a calendar, useful cultural notes (illustrated), in fact, much matter peculiarly valuable to those for whom the book is principally intended.—*The Queensland Agricultural Journal*, February. This deals with stock, orchard, bees, and farm and field crops generally. There is a note, with a full-page illustration, of the Chinese Burr, *Triumfetta rhomboidea*, by Mr. F. M. Bailey.

PRIMULA MEGASEÆFOLIA, BOISSIER.*

THIS very pretty hardy Primrose is a native of Pontus, Asia Minor, with stalked, oblong, cordate, hairy leaves, and umbellate flowers, raised on a scape about the length of the leaves. The colour of the flowers is a luminous crimson-purple. Our illustration (fig. 84) was taken from a plant shown by Miss Willmott before the Royal Horticultural Society at its meeting on March 26, when the species was recommended an Award of Merit.

HOME CORRESPONDENCE.

LATE PEARS.—I have been reading with interest the various letters that have appeared in the *Gardeners' Chronicle* respecting useful late Pears, and am surprised that no one has alluded to the following varieties:—Doyenné d'Alençon and Beurré Sterckmanns, which are varieties that grow and fruit well here. The fruits of Doyenné d'Alençon from a tree growing on a wall of a house facing east were gathered on October 30, and these fruits began to ripen towards the end of December. Beurré Sterckmanns, growing on an espalier and on a bush, were gathered on October 19, and began to ripen at the end of the following month. We have also one named Martin Sire, which ripened in December, but which I cannot see described in any fruit catalogue that I have perused. E. Strange, Kibworth, Leicester.

PEAR BEURRÉ RANCE.—In answer to Mr. Slade in reference to Beurré Rance Pear, I may say that during the time I have been at Lifton, it has always appeared at dessert, and much appreciated. It is also a good stewing Pear if used before it is ripe, and the trees crop well most years; it has never failed here but once. Even in bad Pear years it has carried a crop, and in most years the fruits have to be thinned in order to obtain fair size. I never considered there was much colour in the rind of Beurré Rance, it being of a green tint. I am glad to know Mr. Slade finds it useful for one purpose, viz., exhibition. Wright's *Fruit Growers' Guide* describes it as follows:—"Fruit, large pyriform; skin, dark green, covered with brown russet spots; flesh, greenish-white, melting, juicy, rich vinous flavour; ripe, December to March; one of the best late Pears." On p. 62 of the *Gardeners' Chronicle*, January 26, 1901, Mr. Slade speaks of "the rather excessive application of manure in order to obtain fruits of an unusual size." Is Mr. Slade getting size at the expense of flavour with the application of so much manure? I consider Beurré Rance equal in flavour to any other Pear in its season. We do not get the flavour in Pears after November

which is found in Marie Louise and others that ripen before that time. The soil at Lifton is good, what one may call intermediate, and inclined to heavy, which by trenching, manuring, &c., is made very productive, and it is well adapted for the cultivation of fruit. F. Q. C., Devonshire.

PERENNIAL DELPHINIUMS AS ANNUALS.—In the note on this subject at p. 158, Mr. F. W. Smith would have rendered a service had he stated the locality from which he wrote, and where he attained such good results in dealing with these plants as annuals. Provided that my own experience is more or less the rule, where large numbers of these things are raised from seed each year, the idea of treating them as annuals will not readily find favour. My experience is, that only the strongest and these often the more inferior varieties will flower within the first year, the very finest of the batch often enough only sending up a small spike that will ill-convey the beauty of the plant. This is what happens when the plants are raised in the ordinary manner, that is, sowing in drills in the open or cold frames as soon as the seed is ripe. From the latter, the plants are potted and transplanted early in the year to beds where they flower. Mr. Smith's methods will vary from this because of the altered circumstances of two cases. Usually in doing this the plants once flowered are discarded, but this does not appear to be the case with Mr. Smith, and I submit, wisely so; inasmuch as the flowering in the second year, provided the plant is not disturbed will be greatly superior to the first, seeing that it is a true perennial. Mr. Smith's main idea appears to be the prolonging of the flowering season in these plants. Such being the case, your correspondent will be interested to learn that a good early autumn display may be secured by breaking up a portion of the named varieties yearly early in April, and removing one or two of the leading shoots near to the crown. This enables some of those usually dormant eyes at the base to make growth a little later, the result being a good flowering as stated, and certainly with much less trouble than the seedling treatment requires. Mr. Smith instances *Campanula pyramidalis*, but the comparison is not a good one, as once this plant has given a good spike, the plant may not be alive much longer; certainly it cannot be relied upon to flower again, a fact that obliges the gardener to have a succession of seedlings coming on. E. H. Jenkins, Hampton Hill, Middlesex.

HUMEA ELEGANS.—When recently looking round the gardens of Belmont House, East Barnet, in company of the gardener, Mr. Porteous, I was pleased to observe a number of plants of this once-much-admired half-hardy biennial. It is but seldom that healthy plants, such as these were, are met with in gardens. Humeas are grown less commonly now than in bygone years, when they were used for the embellishment of the flower-garden. It is a pity the plant has almost gone out of cultivation [as a consequence of disease, Ed.], as it is a most graceful decorative subject. A spot sheltered from the wind should be found for it, whether it be planted out or grown in pots and vases. For conservatory and greenhouse decoration it is equally valuable during the summer months, as it is when in flower singularly attractive and graceful, and the perfume exhaled by the leaves is liked by many persons. If a succession of Humea plants is desired, seed should be sown in the months of July and August, and the seedlings kept in a cold pit or frame till late in the autumn, when they should be brought into the greenhouse and placed in a light position to ensure sturdy growth. There is a light and dark coloured variety, the latter being the more desirable one. A. W. [The Humea succeeds in a rather heavy, sandy, turfy loam, used in a roughish state, with but little manure added; the potting should be firm, and drainage thorough, but not overdone, or the plant will run a risk of suffering from over-dryness of the soil, and lose many leaves, and in consequence its appearance will be spoiled. The plants should not be crowded together or mixed up with other plants, and they should be kept gently moving all through the winter season, that is, it must not be kept at all dry at the roots, or subjected to very cold treatment. The last shift for the season should be afforded in time to allow of good re-establishment in the new soil before the winter sets in. Perhaps Mr. Porteous, if this note should meet his eye, will oblige with a brief account of his method of cultivation. Ed.]

* Boissier, *Flora Orientalis*, iv. (1879), 27.

MELON-HOUSES V. MELON-PITS.—I confess that I am inclined to admire the gardening of forty, fifty, or more years ago; its splendid hard-wood plant culture, its perfection of wall fruit-culture, its cheap if rather laborious methods of forcing, its magnificent Grapes and Pineapples, its Melons which were ever so much better flavoured

August if the materials were turned thoroughly and remade, with the addition of fresh stable-dung when the first crop of Melons was cleared off, say, late in May or in early June. It was then quite equal to carrying Cucumbers till late in the autumn. The necessary linings outside supplied additional warmth, and made capital manure for

tation soon set in, the bed sunk a foot in a week, and 6 inches in the next week; and providing the contents had been well mixed, the sinkage was very slow after that, and in fourteen days it was fit for soiling, or rather hilling, the rank steam having passed off, and the more violent heat decreased. In another week the plants could be set out. These made rapid, stocky growth, being close to the glass, i.e., in as full light as are plants on a trellis; and it was soon necessary to soil down the rest of the surface, letting it thin out to 2 or 3 inches at the sides. This kept the soil about the collars of the plants comparatively dry, and canker was rare. There was no burdensome slinging up of the fruits to a trellis, for they lay on the same level as the foliage, and at the most, were placed on pieces of brick or tile, and turned occasionally. I imagine that the better flavour of the fruit was due to water being applied much less frequently than is now required by the thin, narrow beds of soil common in most Melon-houses. Although all work among the plants had to be done by partially removing the lights, it was not attended with any danger if the warmer hours of the forenoon were chosen, and the work quickly carried out. *Hortus.*

LARGE BLOOMS AND MANY.—The enclosed bloom of *Hippeastrum* (*Amaryllis*) is from a spike carrying five flowers, and the bulb, having three spikes, has produced altogether eleven blooms. Our *Amaryllis* generally show two spikes, and it is not unusual for some of the spikes to have five flowers, but I do not recollect having three spikes on a bulb before. The bloom enclosed is a seedling raised by me some seven years since, the parent bulbs having been two of Messrs. Veitch's best seedlings of that period. *T. H. Slade, Poltimore Gardens, Exeter, April 1, 1901.* [Our correspondent's flower is a very large one, the segments being 6 inches long by 3½ inches wide. The colour is very bright red, with silvery-white markings on lower segments. *ED*]

POTATO DEGENERATION.—Mr. Gaut, in a recent issue of the *Gardeners' Chronicle*, still adheres to the theory that Potatoes naturally degenerate. If that be so, how is it that the natural species, *Solanum tuberosum*, has been preserved in all its native robustness through tuber agency from its introduction into Europe until now? But how far does the Potato differ from the tuberous-rooting *Dahlia*—for instance, plants propagated through preserving the fleshy roots through the winter, either by division or by cuttings, having remained vigorous for half a century, or even longer? What ground for assuming that Potatoes degenerate because old varieties have gone out of cultivation? It seems useless to show that of all old varieties the Ashleaf Kidney is the oldest, and yet we have that from the original tuber stock, still so good that it has been hard to beat it. This old variety has thus been preserved because it always has been the rule to take the greatest possible care of the seed-tubers during the resting months of winter. If we did so with all others we should hear little of deterioration. If we have not now in cultivation the Regent, Fluke, and Lapstone, that are referred to, is it not because in the grave disease years which we all hope to be past, that these varieties were almost exterminated by disease, arising not from inherent constitutional weakness, but rather from the fact that their texture or tuber flesh rendered them more amenable to disease spores than are many varieties since raised that have not by any means the flesh and flavour of those named. Besides, none of these were great croppers, and it was no matter for surprise when the introduction of great croppers, and more profitable ones, gave the old varieties their *coup de grâce*. With respect to the greening practice, it seems to be overlooked that, after all, what may be classed as greening is just as much obtained through the sensible practice of exposing seed tubers either in shallow boxes or on shelves in cool, light airy stores, producing just the same greening and hardening effect on the skins of the tuber that is furnished when the sets are laid out in the full sunshine to green in the autumn. The only difference is, that the greening is a much slower process. Some forty years ago I exposed for ten days on the ground tubers of Prince of Wales and Dawe's Matchless Kidney, two then of our finest varieties. When gathered up I found to my surprise that every tuber was diseased, though when dry apparently quite healthy. No doubt the cause was the abund-



FIG. 84.—*PRIMULA MEGASEFFOLIA*. (SEE P. 222)

than those to which we are treated at this day, and even to its bedding out, which had a period of rather brief splendour, if you will; but, at any rate, there is nothing like it now. But I am getting away from my text. I have a sneaking regard for the brick forcing-pit, heated as regarded the upper portion with hot-water pipes, and bottom-heat afforded by dung and leaves that supplied warmth enough to last from February till

the kitchen-garden afterwards. Now I fear much of the dung to be had from the stables of country establishments is claimed by the farm, the gardener having but little use for it. So much the worse for the garden—another instance of a "dole in aid of the farmer" at somebody's expense. Well, the pits were made very full of dung and tree-leaves, well trodden-in and compacted in every part, the materials reaching to the wall-plate. Fermen-

ance of live spores floating in the air settling on the tubers and penetrating them, just as they penetrate and live on the leaf and stem-tissue. I have never exposed seed-tubers in that way since. My exposure now is under cover, and is very ample. *A. D.*

WOOD LEOPARD MOTH (ZEUZERA AESCULI).—Referring to the article on the above in your issue of the 23rd ult., it may interest your readers to know that my gardener found two specimens this year when pruning. I regret that one is dead in Lane's Prince Albert Apple-tree (No. 2); the other is alive (No. 1). [Shoots sent by writer. *ED.*] They seem very destructive, having practically killed the Lane's Prince Albert tree, as it was in the main stem of a young bush-tree. I am afraid I have several of the caterpillars in my garden, but will watch very carefully and let you know if more are found. *Geo. Fred. Rounieu, J.P., F.R.H.S.*

ROOTS AND PLANTING.—I wondered as I read over the note on this subject from that genial writer Mr. Harrison Weir, how many gardeners who are constantly planting roots and trees in all sorts of soils that have been received from all sorts of soils, what they thought of his views in relation to the fitness of diverse roots for light or stiff soil. I should venture to hazard the opinion, that for nine-tenths of planters they prefer plenty of fibrous roots to stout thong-like ones, and if the soil be naturally stiff, they would accommodate circumstances to requirements by having at hand in a barrow, some fine soil to lay about the fibres before filling in the stiffer soil. In connection with myriads of things on very stiff soil, I have had to do so, and soon after find that the small fibrous roots made themselves at home in the clayey-loam. The fact seems to be, the more fibre the more root-hairs; hence, the greater capacity of the thing planted to commence quick root action and feeding. Few planters will hold that so far as trees and shrubs are concerned, one man can do the planting so well, by any means so rapidly as two men can. One holds the thing planted erect, and the branches up, so that the other can see how to distribute soil about the roots. Planting is absolutely a matter of intelligence, so much of its success depends upon it. With all due respect, I should not tie newly-planted trees to stout stakes driven into the centre of the holes, in which the trees are to be planted at the very first. Stakes are immovable, but trees newly planted will sink a little, and in such case with tight ties, the trees would be hung. But I go further, and hold that such slight motion as the wind exercises on newly-planted trees and shrubs, for the first six weeks is good for them, and helps to excite the roots early, and to cause the trees to well settle into their places. Then the stems may be securely tied to the stakes. *A. D.*

LATE PEARS.—Reverting to the discussion that has been going on in these columns, I would remark that many late varieties of poor quality, comparatively useless for dessert, have this year been quite melting, much less gritty, and of very fair flavour. It is a matter for wonder that gardeners do not generally remove late Pears from the fruit-room to a dark place, with a temperature of 55° to 60°, for a week or fortnight, according to the variety and its stage of ripeness, before being served at dessert. If they are put into boxes, these should not be of Fir, or any other wood which has an odour, or that is painted. The unusual good quality of these Pears I attribute to the sunny autumn of 1900. A severe thinning of the branches of Pear-trees is practised here, so as to secure and maintain every branch on the bush or pyramid-tree as a perfect and complete cordon of fruiting spurs from base to summit, which sun and air can reach in every part. The removal of unnecessary shoots receives attention throughout the summer. Any neglect of this operation hinders the proper maturation of the fruit buds, and the inner minute flower organs then forming of the next season. In this matter of thorough ripening of the shoots I have for several years past given much attention, as well as afforded as much warmth as possible to the soil. My object has been chiefly in the direction of increasing the number of fibrous roots near to the surface of the soil, and feeding and maintaining them by applying liquid manure and suitable mulchings, according to the season of the year. As soon as the crop is gathered, some cultivators quite forget or overlook the needs of their trees, but this is just the time, and even right up to the fall

of the leaf, or yet later still, when liquid-manure is of the greatest advantage, for doubtless it is then that we find the greatest number of active roots, provided always that the drainage is what it should be, and the liquid-manure not thick and unwholesomely rank. There cannot be a doubt but that the chronic debility of aged Pear-trees is due to the poverty of the soil. In such cases surface-roots are entirely absent, owing to the orthodox digging a tree border undergoes. A space in front of the wall of 6 feet in width should never be cropped, but left for the trees. Pear-trees in this sterile state should be dug up and destroyed as being worthless. The best varieties of late Pears now in season, all of which remain a long time in good condition, as compared with the early and mid-season section, are Olivier de Serres, Beurré de Jonghe, Doyenné d'Alençon, the very earliest but rather risky variety of Pear, but the leaves are early too, and consequently of some use in protecting the flowers; L. Inconnue, Passe Crassane, Easter Beurré, Marie Guisee, Bergamot d'Esperen, and Josephine de Malines, the best late variety for standards. *Willm. Crump, Madresfield Court.*

WEATHER LORE FOR APRIL:—

"If the sun shines on Easter-day, it shines on Whit Sunday likewise."

"April showers bring forth May flowers."

"Cloudy April, dewy May."

"If it thunders on All Fools' Day, it brings good crops of Corn and Hay."

"A cold April, the barn will fill."

"It is not April without a frosty crown."

J. C.

THE WEATHER IN YORKSHIRE.—I have rarely known such severe weather in March. This morning there were 20° of frost registered here, and during the week 11°, 16°, 14°, and 12°. About thirty years ago, when I was at Colesbourne Park, I filled the icehouse on or about March 17. At present it is snowing heavily. *A. J. Temple, Eshton Hall Gardens, near Leeds, March 29.*

WEATHER IN DUNDEE.—We have experienced some very severe weather for the time of year during last week: March 23, 8° frost, wind N.E.; March 24, 11°; March 25, 13°; March 26, 13°; March 27, 14°; March 28, 14°; March 29, 20°. During the whole of the 29th the wind was bitterly cold, N.N.E., and at night a gale with heavy snow. *Thyne & Paton.*

BOOK NOTICE.

PANDANACEÆ. By Prof. O. Warburg.

SCREW PINES are, from a horticultural standpoint, of high value; but it is a family which might drive a botanist to despair. Prof. Warburg, who has for some years studied the Monsoon flora *in loco*, has just published a monograph of that family in the *Pflanzenreich*, edited by Engler (cf. *Gard. Chron.*, October 27, 1900, ii., p. 310). Warburg has had the opportunity of seeing a good many Screw Pines in their wild state, an opportunity of the highest importance for the discrimination of species in a family of such uniformity of character as are the Screw Pines. The author distinguishes only three genera, viz., the monotypic *Sararanga*, Hemsley, of the Solomon Islands and New Guinea; *Freycinetia*, Gaudichaud, with no fewer than sixty-two species, of which only two are *incertæ sedis*; and *Pandanus*, L., with 140 species, besides which thirty-nine names are enumerated of those Pandanads which are not at all or which are insufficiently described, and sixteen species of which the flowers and fruits are so far unknown, but which are cultivated in gardens. Prof. Warburg is a practical man, as he gives not only scientific plans for the determination of species, but also tables to show the geographical distribution of the species; so that the collector may at once see which species are to be looked for. Generally speaking, the species have but a very limited distribution. Of the genus *Freycinetia* are known two species from Ceylon, one from Burma, one from the Andamans, two from the Malay Peninsula, three from Sumatra, four from Borneo, six from

Java, seven from Celebes, one from Timor, two from Amboina, seven from the Philippine Islands, one from Formosa, eight from New Guinea, one from New Hanover, two from the Solomon Islands, five from the Fiji Islands, two from Samoa, one from Tonga, one from Tahiti, one from the Sandwich Islands, four from New Caledonia, two from New Zealand, two from Australia. Of one only, *F. Webbiana*, the native locality is unknown.

The genus *Pandanus* is distributed over Western Africa (seven species), East Africa (eight species), Mauritius (twelve species), Réunion (four species), Rodriguez (four species), Madagascar (twenty-five species), Seychelles Islands (five species), Ceylon and S. India (three species), N.-E. India (four species), Burma and Tenasserim (six species), Cochin China, Siam, and South China (three species), Malayan Peninsula (ten species), Bangka and Sumatra (nine species), Borneo (seven species), Java (six species), Celebes (five species), Molucca and Little Sunda Islands (ten species), Philippine Islands (seven species), Northern and Eastern Polynesia (three species), Southern Polynesia (eleven species), Australia (five species), and Central Polynesia (five species).

As the descriptions are in Latin, the work is available to those who do not understand German. The price, 5 marks 60 pfennige (about 5s. 6d.), may be called low, considering that there are 193 illustrations, amongst which are four very fine reproductions from photographs taken by the author, viz., a gigantic *Pandanus dubius*, with aerial roots about 15 feet high; a *Pandanus labyrinthinus*, which forms large labyrinth; a forest of *Pandanus Solms-Laubachii*; and a very fine specimen of *Freycinetia javanica*, which gives a good idea of tropical vegetation. It is a pity that the analytical figures are partly of a somewhat rude manner. *Dr. Udo Dammer.*

RAISING HARDY FRUIT TREES FROM SEEDS.

(Continued from page 202.)

APRICOTS.—By raising seedling Apricots, we have not only a means of securing new varieties, but also a means of reproducing the parent plant almost true to type. Moreover, important cultural disabilities, such as the wholesale dying off of large branches, and the splitting of fruit, may be corrected or considerably reduced by raising the trees on their own roots. The stones should be selected from the best flavoured fruits, which should be thoroughly ripened, and kept in store for a few weeks, when the kernels should be extracted and sown as advised for Peaches. The seedlings are not very robust, as a rule, during the first year, and they require more than ordinary care till such time as they are fit to be planted out-of-doors; that is when they are fully a year old. At the time, the tap-roots of the seedlings should be shortened, and the plants put out into nursery beds which have been well dressed with rough leaf-soil, road-sweepings, and the like; they will not require any other kind of pruning until the second year. At this age the leader should be shortened to 1 foot. This act will induce another leader to grow, and two lateral ones, which will form the foundation of a fan-shaped tree. These shoots should have their points pinched out about midsummer-day, and two more shoots from each branch encouraged to extend, and thenceforward ordinary pruning and stopping will suffice.

The Moor Park variety may be raised almost true to type, and such variations as will probably be found are nearly as good as, and some are superior to, the parent. Seedlings raised from the Breda are especially desirable, as it is among descendants of this variety that we must look for new Apricots that will ripen in the open, at least, south of the Humber; whilst a cross between this variety and Moor Park would probably prove an ideal fruit, combining the hardihood of the former and the excellent fruiting qualities of the latter variety. In any case, seedling Apricots

whether cross-bred varieties or not, are likely to prove more amenable to successful cultivation than varieties worked on the Plum stock, to which we owe the wholesale dying off of large ranches, and the splitting of the stones of the fruits, a fault, in all probability, due to the shallow rooting proclivities of the stock.

With regard to Plums and kindred fruits, the lack of space will not allow me to enter into detail; suffice it to say that among these, as with other fruits, there is room for the improvement of existing varieties as well as room for new ones.

The foregoing article is but a tithe of what might be written on this absorbing subject to do it all justice. Most gardeners would find raising new fruits from seeds most interesting, though it may not be profitable work. It may not be possible for one and all to become a Rivers or a Bunyard among fruit-raisers, but each may raise a few seedlings, and a large number of workers operating with different varieties would probably raise several new things of merit among their productions. *Geo. B. Mallett, Isleworth.*

beat the other essayists, and her terse, crisp sentences showed a good knowledge of the subject. She deprecated the use of *sécateurs*, stating that they will not produce a clean surface-cut. The practical work was by no means well done, and it may have been partly due to want of sufficient light. The judges award read as follows: Mr. Campbell, 1st, foreman, the gardens, Farmleigh, Castleknock, who appeared to be more familiar with his subject; Miss Douglas was 2nd, her practical demonstration was by no means brilliant; and Mr. Richardson, the gardens, Abbeyville, Malabide, 3rd; a Certificate of Merit was awarded to Mr. Reid, the gardens, Montrose. The cross-questioning of the judges at times during the operation tended to confuse the competitors.

LIPARIS TRICALLOSA.

OUR illustration (fig. 85) represents a part of an inflorescence of this singular-looking Orchid, taken from a plant for which Sir Trevor Lawrence, Bart. (gr., Mr. W. H. White) was awarded a Botanical

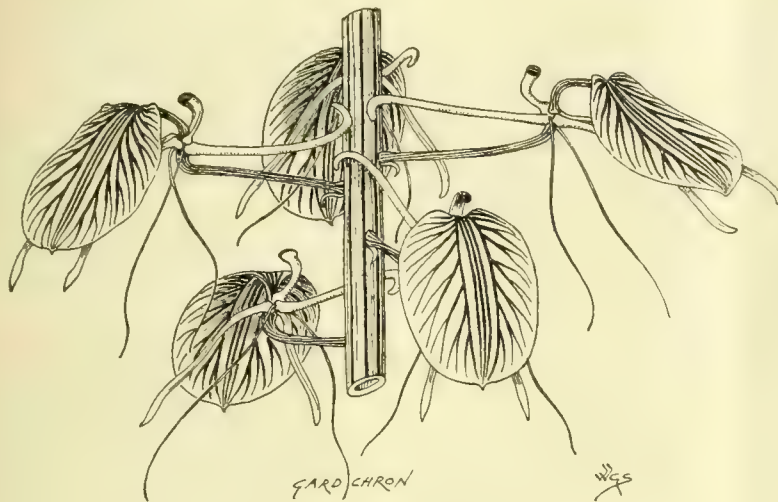


FIG. 85.—LIPARIS TRICALLOSA.

IRELAND.

THE WEATHER.—IRIS RETICULATA.—IRISH GARDENERS' SOCIETY.

"MARCH, the month for many weathers," has been exemplified this season. The rainfall has not been heavy, but there were keen east winds with a low temperature. Snow fell at frequent intervals, but it soon disappeared. No severe frosts have occurred. There is every probability that the season will be a late one.

It seems strange that cultivators of bulbous plants on this side of the Channel do not plant *Iris reticulata* more commonly. It is one of the most beautiful of our spring flowers. There is an improved form, with larger petals, and possessing a violet perfume. If planted in a sheltered position, and not disturbed, the plants will rapidly increase, and the species is perfectly hardy.

The Irish Gardeners' Society held its usual meeting on Thursday last. Among the new members elected was Miss Douglas, Stains Gardens, Clontarf, our first "lady" gardener.

The business of the evening consisted of a "Pruning Competition," an Apple and Pear-tree being the species operated upon. The trees were erected in prominent places in the hall, prior to the judging, each candidate had to read an essay upon the theory of pruning. The following were the judges, Messrs. Dick (late of Phoenix Park), Bridgeford, and O'Kelly (President). Miss Douglas easily

Certificate at the Royal Horticultural Society's meeting on March 12, 1901. The species, which is a large one for the genus, was described by Reichenbach in the *Gardeners' Chronicle*, May 31, 1879, p. 684, the species having been previously known from specimens only, collected in Borneo by Mr. F. W. Burbidge. The flowers are of variable colour, and change as they approach maturity. They are cream-coloured, tinged with purple and brown, and the large and prominently-displayed lip has a fine reticulation of a dark claret-purple tint. The plant requires to be grown in a warm-house, and after growth it should be rested by withholding water for a time; but it must still be kept in an intermediate-house, and not rested in too low a temperature.

FRUIT REGISTER.

STRAWBERRY PRINCESS DAGMAR.

THE *Revue Horticole* of February 16 gives a coloured figure of this late variety, highly spoken of after trial on a large scale for its vigour and productiveness, and resistance to both cold and drought. The fruits are large and irregularly conical, or flattened and cockscomb-shaped; achenes sunk in the rose-coloured flesh; juice abundant, sugary, slightly acid, very fragrant; flavour excellent when ripe. Nothing is known as to its origin, and it is not mentioned in the last edition of Hogg's *Fruit Manual*.

CRAB APPLES.

The number of the *Garten Flora* for March contains a coloured plate illustrative of various Crab Apples, variations of or hybrids from *Malus sibirica*, *baccata*, and *prunifolia*, the *Martha*, *Whitney* Crab, *flava*, *ampla*, *Hyalop*, *Ornata* and *translucens*.

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

MARCH 26.—Present: Dr. M. T. Masters, F.R.S., in the chair; Messrs. Hogg, Drury, Houston, O'Brien, Holmes, Bennett, Rendle, Saunders, Michael, Salmon, Worsley, Odell, E. im Thurn, Bennett-Poe, Douglas, Rev. W. Wilks, Prof. Boulger, Dr. Muller, and Rev. Prof. G. Henslow, Hon. Sec.

Cattleya, *Monstrous*.—Dr. MASTERS described the specimen sent to the last meeting as follows:—The flower is dimorphic, in having two sepals, a lip, a lateral petal displaced so as to be situated in the centre, at the back of the flower, in the position usually occupied by the dorsal sepal, and a normal column.

Cypripedium illustrations.—Mr. G. S. SAUNDERS showed a series of beautifully-executed water-colour drawings of malformations in the flowers of this genus as follows:—The entire absence of one or of both side petals; the entire absence of the labellum, its presence in a distorted form, and its partial or entire duplication; one or both side petals partially, or entirely, taking the form of the labellum; the side petals joined to the upper or lower sepals; the upper and lower sepals joined together; one side petal adhering to the labellum; the lower sepal adhering to the labellum; a duplication of parts; a double flower, caused by the adherence of two flowers; a flower showing the two lower sepals separate which are generally joined together in this genus.

Acotyledonous members of Amaryllideae.—Mr. WORSLEY gave some account of his observations as follows:—"Among Amaryllideae acotyledonous species occur in the genera *Crinum*, *Hymenocallis*, *Elisena*, and probably in *Griffinia* and several Andine *Pancratia*. He does not think it is constant even in one species. Among the *Crinums* it occurs occasionally in *C. Moorei*; frequently, or almost invariably, in *Ismene* and *Elisena*, but rarely, if ever, in *Hymenocallis* true. Plants from regions of annual droughts gain advantage by immediately forming a bulb at some depth under the soil, which will not break into growth until the rains return, and will thus commence their annual growth at the best time." In the absence of specimens and illustrations it was impossible to form an opinion as to the peculiar and anomalous conditions described. Orchids and parasites, &c., Dr. Masters observed, are without cotyledons, because the perfect embryo is not formed. Mr. Worsley also described the usual curvature of the radicle, or "geotropism," characteristic of all seed germinating in the ground. He also described how a bulb will be formed at the bottom of the flower-pot. This, Dr. Masters remarked, was probably the well-known formation of a "dropper," so common in *Tulips*, &c., the new bulb being formed in a leaf-sheath.

Ferns, Anomalous.—Mr. DRURY exhibited the following remarkable specimens:—Fronds of *Polystichum angulare* var. *sinuosum*, sent by Rev. H. Kingsmill Moore, Dublin. It is unique in having all the fronds evenly flexuose at short intervals in the plane of the frond. In this respect it is quite distinct from the several flexuose forms already found, they being generally distorted, a fact which in pressed herbarium specimens is masked by pressure. The fronds exhibited were unpressed, as received. The Fern was found wild many years ago in Ireland by Mr. Davey.

Hybrid Orchids.—Mr. DOUGLAS brought some hybrids "for the purpose of showing that Orchids which flower naturally at the same period of the year produce satisfactory results, whereas if crosses are effected between species that do not naturally flower at the same period, the results are unsatisfactory." As an example of the latter he referred to *Lelia x Briseis*, a cross between *Lelia purpurata* (pollen parent) and *L. harpophylla* (seed parent). He observes, "The seed did not germinate freely; two plants only were obtained from what seemed a very satisfactory capsule. The Orchid Committee thought it worthy of an Award of Merit. Both plants are natives of Southern Brazil. *L. harpophylla* produces its flowers under cultivation in February and March; its flowers are small, 2 to 3 inches across, of a bright cinnamon-red colour, and altogether unlike the gorgeous *L. purpurata*, with coriaceous leaves 12 to 15 inches long, having flowers 6 to 8 inches diameter of an amethyst-purple colour. The only trace of this colour in the progeny is a slight tinge on the lip, and in no respect is there anything to lead one to the conclusion that *L. purpurata* was the parent. The plant is very much larger in all its than

L. harpophylla, but not nearly approaching even the intermediate size of *L. purpurata*, either in flower, leaf, or pseudo-bulbs. Can any reason (other than the fact that the two species do not flower at the same season of the year) be shown that the seedling is not intermediate between the two parents? He also exhibited flowers of *Cymbidium eburneo-Lowianum*, with flowers of the seed parent, *C. Lowianum*, and of the pollen parent, *C. eburneum*. "In this case the two parents naturally produce their flowers at the same time, and the result of hybridisation is entirely satisfactory. The pseudo-bulbs and leaves are as intermediate as are the flowers: The flower-spikes are longer than those of *C. eburneum*, but not so long as in *C. Lowianum*. In the one case the result was disappointing, in the other very satisfactory; moreover, it has been asserted that such results are to be expected. May I ask why?"

Dendrobium Leaves, Spotted.—Mr. DOUGLAS remarks:—"The leaves of *Dendrobium*, freely covered with black decayed spots and blotches, have puzzled me greatly. I had a few plants sent here which developed the disease, and it speedily spread to my own plants, which were quite healthy. I lost several altogether, as it is also developed on the stems. There does not seem to be any fungus on the diseased parts, and yet by no manner of treatment can I get rid of this pest."

Cattleya Trianoi, monstrous.—Mr. DOUGLAS observes:—"The flower of *Cattleya Trianoi* was sent to me by the Rev. Francis D. Horner. It is abnormal as regards colour, but it has been constant for six years."

Turmeric tubers.—Mr. HOLMES exhibited fresh specimens, an unusual condition; as a marketable product they arrive generally in a dried condition. They are the old tubers of *Curcuma longa*; the young ones are white, and contain starch.

Plants from the Botanic Gardens, Cambridge.—Mr. LYNCH sent the following interesting species:—*Arctotis*, sp. n., a fine plant, sent to Cambridge by Mr. Gumbleton; it somewhat resembles *A. glaucophylla*. *Melaspheerula graminea*, a curious and graceful Irid, charming among bolder flowers. There are two forms, one having pale yellow flowers, and is rare; the other with darker tinted blossoms. Hybrid *Sarracenia*.—These showed variations of colour, according to those of the parent species as follows: *S. purpurea* × *S. flava* = *Stevensii*; *S. rubra* × *S. purpurea* = *Chelsoni*; *flava* × *Stevensii* = *illustrata*; *Chelsoni* × *illustrata* = hybrids sent. *Laportea moroides*.—This plant had a large bunch of Mulberry-like fruit, but paler in tint; it bore numerous stinging hairs, the leaf also resembled that of the Mulberry-tree. It belongs to the tribe *Urticeae* of *Urticaceae*. It is figured in *Bot. Mag.*, 1889, t. 7057, and is a native of N. Queensland, where it is said to cause the death of horses. *Deherainia smaragdina*.—A native of Mexico; a tree of the order *Myrsineae*, remarkable for its dark green flowers, the corolla having chlorophyll. There are foliaceous, rudimentary stamens alternating with the petals, as in *Brodiaea* (*Samolus*), of the allied order *Primulaceae*. The anthers are extrorse, dehiscing, while forming a central, erect column, but spreading on the petals subsequently. It is figured in *Bot. Mag.*, t. 6373. *Fungi*.—Mr. LYNCH also sent some specimens of *Peziza lanuginosa* (described as *Sepultaria Summeriana* in *Masse's Fungus Flora*), growing in the grounds of the Botanic Garden.

LINNEAN.

MARCH 21.—Mr. F. D. GODMAN, F.R.S., Vice-President, in the Chair.

Mr. J. E. HARTING, F.L.S., exhibited and made remarks on some photographs of female roe deer (*Capreolus caprea*) bearing antlers, one of which had been shot at Neudau, in East Styria, in December last. This animal, which was very fat, weighed 47 lb. 6 oz. A careful examination of the reproductive organs showed that its condition was perfectly normal, and that it differed in no respect from an ordinary doe of this species, except in having horns. It was considered by the foresters who examined it to be three or four years old, and, in their opinion, from the appearance of the teeth it was a doe which had never paired. The horns, which were bifurcated and of a type common in the Austrian Tyrol, measured about $\frac{1}{2}$ inches in length.

Mr. H. J. ELWES, F.R.S., considered the case so remarkable and unusual, as to suggest the probability of some mistake having been made in determining the sex. Mr. HARTING, in reply, stated that this was by no means unique.

Mr. GODMAN observed that, although he had had considerable experience of deer in Scotland (both red deer and roe), he had never come across so remarkable and abnormal a case.

Mr. HARTING pointed out that such cases were not confined to the genus *Capreolus*, but had been noted rarely in *Cervus elaphus*, and once in the case of the American white-tailed deer, *Caracus virginianus* (shot in East Kootenay, British Columbia), a photograph of which he exhibited.

Mr. P. CHALMERS MITCHELL, M.A., F.L.S., read a paper entitled, "The Anatomy and Morphology of the Intestinal Tract in Birds; with Remarks on the Nomenclature and Valuation of Zoological Characters."

BECKENHAM HORTICULTURAL.

MARCH 22.—Mr. GEORGE MOUNT, Nurseryman, of Canterbury, gave a lecture before a large number of members and friends on "The Cultivation of Roses under Glass." Every detail of culture was made quite clear, beginning with the kind of plant to pot and when to pot them, soils, treatment after potting first season, manures, watering, temperatures, ventilation, pruning, forcing, and treatment after forcing, the best stocks for budding, also size and situation of houses best adapted for Roses. Mr. Mount informed his hearers that he had given up the cultivation of Marechal Niel and most other Tea Roses, in favour of Hybrid Perpetuals, as for these blooms cut with stems 18 inches in length he could get almost his own price from the leading West End London florists. He has some glasshouses, which are during the winter and spring devoted to H.P.'s, each house holding about 2,500 plants in pots not exceeding 8 inches in diameter, which carry from three to seven blooms. A specimen plant of Mrs. John Laing was exhibited carrying seven blooms.

The lecturer was asked a number of questions at the close of the lecture, and the replies given were much appreciated.

A vote of thanks was accorded the lecturer.

EDINBURGH MARKET GARDENERS'.

MANURING EXPERIMENTS WITH FRUITS AND VEGETABLES.

Mr. F. W. E. SHRIVELL, Tonbridge, Kent, lectured at the last dated meeting of Edinburgh Market Gardeners, on "Experiments with Chemical and other Manures on Fruit and Market Garden Produce." The lecturer stated that, in conjunction with Dr. Bernard Dyer, he had been carrying on experiments at Tonbridge on vegetables, fruits, and Hops, for about seven years. The idea, he said, was to find out whether it was cheaper to use heavy dressings of farm manure, or light dressings plus varying quantities of chemicals; or whether it was possible to grow the produce with chemicals alone. The results obtained were most interesting and conclusive. Where chemicals had been used, the produce in some cases had been doubled as compared with that produced when the land had been treated only with a dressing of farm-manure. The chemicals used were nitrate of soda, super-phosphate of lime, or basic slag and kainit. In the case of Strawberries, he pointed out that in a five years' record, a light dressing of farm-manure with nitrate and other chemicals, gave the best results, far exceeding that obtained from the heavy dressing of farm-manure alone. With the Cabbage tribe it was demonstrated that it is possible to grow them much cheaper with simply phosphates and kainits than with farm-manure; while with regard to Potatoes, the experiments showed that a certain amount of farm-manure in the soil was necessary, but that when phosphates, nitrates, and kainits were added, a greatly increased crop ensued. D. M.

BOROUGH OF HANLEY HORTICULTURAL FETE.

THE statement of accounts just published by the committee of the Horticultural Fête held in Hanley Park, Staffordshire, shows that the Institution is doing much more than paying its way. There is a balance at the bank of more than £1,600, a gain having been made during the year of at least £700. The sale of tickets prior to the last fête realised the sum of £323 4s. 11d., and the receipts at the gates, £1,363 15s. 10d.

ROYAL CALEDONIAN HORTICULTURAL.

Mr. JOHN FORBES, Nurseryman, Hawick, N.B., staged the prettiest and most effective exhibit yet seen of his novelty *Begonia Caledonia*, which, interspersed as it was with its type, *Begonia Gloire de Lorraine*, brought into prominent relief the utility of this novelty. The splendour of the effect produced by the blending of the pure ivory-white flowers of *Caledonia* and the rosy carmine-coloured flowers of *Gloire de Lorraine*, as seen in this exhibit, was not to be forgotten—both alike in height, habit, floriferousness, each by contrast enhancing the beauty of the other. For a background to this exhibit Mr. Forbes had an interesting and choice collection of named Tree Paeonies in many beautiful varieties, well grown and in full flower, testifying to their value as attractive subjects for conservatory decoration. The exhibit was displayed in Mr. Forbes' best style, and was throughout a continuous centre of admiration to crowds of visitors.

DEVON AND EXETER GARDENERS'.

IS GARDENING A SCIENCE?

At a recent meeting of this Society, Mr. R. W. HODDER, gr. to Mrs. Trevor-Barclay, Ponsandane, Torquay, read a paper discussing the question, "Is Gardening a Science?"

Mr. Hodder showed that the gardening profession had obtained great benefit from modern inventions, and the application of scientific discoveries. By falling into line with higher education and advanced technical education, horticulture during the latter half of the century had deserved to be regarded as a science, or a scientific profession. Modern gardening was largely founded on a close study of natural laws of botany, and upon a more or less intimate knowledge of the chemistry of soils. Gardening, therefore, had a right to be treated as a science, as she is in modern schools or colleges of

horticulture. Though experience in practical gardening, as carried on in the work of a garden from year to year, varying in the same degree as the seasons, was essential to success in cultivation, a scientific knowledge of the requirements of plants, the diseases they were subject to, the enemies to which they might easily fall a prey, and the remedies and antidotes to be employed to avert or overcome the enemy in its manifold forms, was of equal importance.

Hybridisation, grafting, budding, and many other of the more delicate operations in horticulture, could not be classed as mere manual labour. The application of such scientific principles by an expert lifted the occupation to a higher level. Mr. Hodder did not think that gardening in its higher forms had received that acknowledgment from the scientific world which was its due, for he claimed that many valuable scientific lessons and discoveries might be traced to it, and to the work of those who followed it as a profession in one form or another.

READING AND DISTRICT MUTUAL IMPROVEMENT.

THE recent meeting at Reading of this body of gardeners was numerous attended, Mr. L. G. SUTTON in the chair. A lecture on Narcissus was given by the Rev. G. F. ENGLEHEART, of Appleshaw.

The lecturer, in introducing his subject, drew attention to the great industry that had sprung up in connection with the Daffodil, mentioning that he had himself seen at Plymouth as much as £1200 worth of bloom in one train for the London markets. The Narcissus had attained its present position as a market flower owing to its coming into bloom in the open air when other outdoor flowers were very scarce, for it could be put on the market sometimes in March, and always in April. It travelled well, as the blooms would keep fresh for days if they had been placed in water a few hours previous to packing. Then followed remarks as to the homes of the wild varieties, and consideration of the soils in which they grew; after which the garden history of the plant was touched upon, reference being made to the work done in the days of the past by Dean Herbert, Leeds, Backhouse, &c. The features of the leading varieties were then explained, also the modes of crossing, and a few hints on culture given. A hearty vote of thanks was tendered to the reverend gentleman for his excellent lecture.

Owing to the lateness of the season, only a few Narcissus were staged. The chief exhibit was a group of *Cineraria stellata*, shown by Mr. C. P. CRETCHLEY, of the Honey Gardens, Twyford.

NATIONAL ROSE SOCIETY.

Guarantee Fund.—The following promises have been received since the last meeting:—

Mr. James Brown, £5; Mr. Hugh Dickson, £5; Mr. A. Hill Gray, £5; Mr. G. Moules, £3; Messrs. J. Townsend & Sons, £5. Total, £331 3s. Further promises are requested, as it is desirable that any risk there may be should be distributed over as large a number of members as possible.

Special Prizes.—As the committee are anxious that the schedule for the Temple show shall be the most attractive the society has yet issued, it has been decided that donors to the Guarantee Fund shall have the value of any special prizes they may offer deducted from their promised donation to that fund. The following offers have been already received:—Rev. F. R. Burnside, £2 2s.; Mrs. F. W. Campion, £10; "Ben Cant" Memorial Prize, £5; Messrs. B. R. Cant & Sons, £5; Messrs. Frank Cant & Co., £5 5s.; Girdlestone Memorial Prize, £5 5s.; Mr. C. J. Grahame, challenge Cup; Mr. Conway Jones, £3 3s.; Langton Memorial Challenge Prize, £10 10s., per Mr. G. W. Cook; Mr. E. Mawley, £2; Mr. O. G. Orpen, £2 2s.; Mr. George Prince, £4 10s.; Messrs. D. Prior & Sons, £3 3s.; Mr. J. T. Strange, £2 2s.; Mr. Charles Turner, £5 5s.

Further offers of special prizes are earnestly requested.—H. H. Dombain and E. Mawley, Hon. Secs.

BLYTHEWOOD, NEAR MAIDENHEAD.

THE estate of Blythewood, the property of George Hanbury, Esq., is pleasantly situated on rising ground, about one mile north of Taplow Station on the Great Western Railway, and overlooks the valley of the Thames, with Bray church, a prominent object, in the background. The red-brick mansion-house was erected about thirty years ago for the present proprietor on ground that was at one time a portion of the Dropmore estate. The mansion is approached on the south side by a carriage-drive of some half a mile in length; groups of specimen Conifers, planted when the estate was laid out, flanking the road at irregular intervals. Mr. Hubbard, the present head gardener, began laying out the place before the mansion was completed, and has seen the Conifers of his planting develop into shapely trees. The best are *Sequoia gigantea*, *Pinus excelsa*, *Cedrus Deodara*, *C. atlantica*, and *Picea pungens glauca*. The flower-garden, situated on the south-west side of the mansion

is laid out in Box, and from thence the grounds slope rather sharply to a piece of ornamental water; and a large Rose garden, Roses being here great favourites and cultivated extensively.

There are two kitchen gardens: the oldest, originally formed the source for the supply of vegetables to the mansion at Dropmore in the time of Lord and Lady Grenville during the early years of the century just expired. Excellent crops were noted in both gardens. Mr. Hubbard adopts the method of keeping his Carrots in the ground where grown through the winter, covering slightly with bracken or litter in the event of severe frosts occurring, but up to the time of my visit in early February this precaution had not been found necessary; he remarked that until this method was adopted he was unable to preserve his Carrots in a sound condition through the winter. Both kitchen gardens are enclosed with walls, against which fruit trees, adapted to the various aspects, are planted, many bush and standard Apple-trees are thriving.

The glass department is conveniently situated a short distance from the mansion, and comprises ranges of lean-to Peach-houses and vineries, besides a number of span-roof, and three-quarter span plant-houses. In the first span-roof house entered was a fine batch of Arums, single-flowered zonal Pelargoniums, and Freesias. A second and larger house had the centre stage filled with *Pancratiums*—fine specimens, the pots crowded with large bulbs—and *Eucharis grandiflora*, that grow and bloom here with great freedom. They remain in the same position in this stove temperature, and receive almost similar cultural treatment the year through, and no disease has ever attacked them.

Suspended from the roof and on the side benches were numbers of large *Dendrobes* and *Cattleyas*, and a good batch of *Lælia anceps* in bloom. Three other span-houses were filled with *Calanthes* and other Orchids, besides plants for table decoration, including many varieties of highly coloured *Codiaeums* and *Dracænas*. Another large span-house contained pot Roses just starting into growth, and a long lean-to with a central path had the stage at the back part of the house filled with a fine lot of *Cinerarias*, and a healthy batch of *Souvenir de la Malmaison* Carnations on the front one.

The vineries and Peach-houses are in excellent condition, the earliest Peaches being then in bloom; and in the Strawberry-house a batch of strong plants was making satisfactory progress. In the Mushroom-house a good show of Mushrooms was remarked, besides large batches of Rhubarb, Seakale, and Chicory and other saladings. Numerous heated pits are filled with Potatoes and other vegetables.

Mr. Hubbard is an enthusiast in matters horticultural, and relates many reminiscences of former triumphs with considerable pride, making especial mention of a plant of *Phalenopsis Schilleriana* grown by him some years since in one of the above-named span-houses, that carried 140 blooms. C. H.

THE HERBACEOUS BORDER.

HARDY STATICES.

THERE are several species of *Statice* of a hardy or half-hardy character, well worthy of cultivation. The flowers are of a papery-substance, and on that account are useful in a cut state for filling vases in the winter. Perhaps the finest of the perennial species is *S. latifolia*, which bears numerous bright blue flowers, produced high above the broad, dark green foliage; *S. tatarica* produces reddish-hued flowers, which are excellent for mixing with the blue-flowered *Statices* and *Rhodanthes*, *Helichrysums*, *Acrocliniums*, various grass, haulms, &c. *S. eximia* is a hardy dwarf species, suitable for planting on the rockery, or at the margin of a border of herbaceous perennials; its flower-stems do not exceed 1 foot in height.

Any of the annual or perennial species of *Statice* may be raised from seed, or by division if care be exercised, for the roots are for the most part thick

and fleshy. The raising of seedling *Statices* is an interesting proceeding, as new forms will often present themselves. All the annual species should be raised from seed sown in the present month, pricking out the seedlings and growing them on freely. They may be planted out where they are intended to flower in May. The annual varieties worth growing are *S. Suwarowi*, *S. Thaini*, and *S. spicata*.

There are a few biennial kinds well worthy of a place, which need some slight winter protection with bracken or a mound of wood-ashes. These consist of *S. Bardwelli*, and *S. sinuata hybrida*. Seeds may be home-saved, and sown soon after gathered. H. T. Martin, Stoneleigh Abbey Gardens, Kenilworth.

PLANT NOTES.

CYCLAMEN LIBANOTICUM.

I THINK it needs no gift of prophecy to foresee that this charming plant may be put to a good use, viz., that of improving our present race of early flowering hardy *Cyclamens*. The advent of the above may raise the hopes of those interested in these plants, for doubtless crosses with *C. ibericum* and *C. Coum* would tend to improve these charming plants all round. Much good was accomplished by the late Mr. Jas. Atkins in this field, and the good work that he achieved may be extended by intermingling *C. libanoticum* with the best varieties which were raised by him at Painswick. In the early spring, and indeed at any season, there was much to interest the gardener in this small yet richly-stored garden. *C. libanoticum* is in itself a good plant, and has the very large leafage of *C. Coum*, and flow r nearly related to *C. europæum*. The foliage is less iaceous than that of *C. Coum*, and in age is almost plain as in that kind, but in other stages traces of mottling are visible. The flowers are borne on stems 4 inches long, and with some profuseness; while the segments of the corolla vary from rhomboid-ovate to ovate acuminate, and fully $\frac{3}{4}$ inch long. The colour is rosy-purple and white, the latter predominating in the upper parts. E. J.

CYCLAMEN.

Of all the plants grown for winter-flowering, none more fully repay for the time and trouble taken than a good batch of *Cyclamen*, either for use as pot-plants in the house or conservatory, or for supplying cut bloom for table decorations, &c. When used for the latter purpose, it will be found advisable to slit the stem about half an inch, when the blooms will keep quite fresh for a week or ten days.

The mode of culture found to answer well here is to sow the seed about the first week in October in thoroughly clean and well-crooked pans, having a good layer of moss over the crocks, and using a compost of equal parts loam and leaf-mould, with a good sprinkling of sand. Having made it firm and level, dibble in the seeds about 1 inch apart, and a quarter of an inch deep, afford water, and place on a shelf in a moist house, having a temperature of about 60°. By the end of the month of February the seedlings will be found to have made three or four leaves, when they should be potted into thumbs, using a similar mixture as before used; and just covering the corms slightly; apply water, and return to the shelf near the glass for two or three weeks longer, then remove them to a house or heated pit having a lower temperature. The next shift will depend on the size of the pots in which they are intended to flower; a 60-sized pot will be found to answer well for the second shift, and a 40 or 48 for the final potting, which is usually performed about the end of June or early in July. At this shift a compost consisting of loam two-thirds, leaf-mould one-third, with the addition of a little charcoal, sand, bone-meal, and an artificial fertiliser, and the potting should be

carried out with moderate firmness and the corm kept clear of the soil. The plants should be placed in a cold frame in the month of May, shaded from bright sunshine at all times, and draughts of cold air avoided, especially during the earlier stages of growth. The lights should be removed after the sun has gone down from July to September, *Cyclamens* delighting in dewy nights; in fact, it will be found advantageous to spray the plants three times daily during very hot weather. The plants should be housed towards the end of the month of September, manure-water should be afforded twice or thrice weekly, and soot-water occasionally. *Cyclamens* should be kept free from green-fly and other insect-pests at all times, or certain failure will result. H. Naylor, Piggotts Manor Gardens, Elstree.

CANKER ON APPLE-TREES.—The following observations on canker on Apple-trees are supplied by M. DESCOURS-DESACRES in a recent number of the *Comptes Rendus*. The subject is one of physiological interest, owing to the analogy that some people see between the parasite of canker in the human race and the *Nectria ditissima*, or canker of trees. Experiments were made over a prolonged period, and on many thousands of Apple-trees. It is observed that:—1. The appearance of the canker from *Nectria ditissima* on a healthy tree is usually preceded by the appearance of a woolly scale, *Aphis Lachnus* (*Eriosoma*), on the branches or roots of the plant. 2. The presence of this woolly insect is almost always followed, on a plant, by the appearance of canker when canker is affecting adjacent trees, but is not, on the contrary, succeeded by the disease if there are no cankered trees in the vicinity. 3. The appearance of canker after the puncture of this aphid seems invariable if the subject attacked by the insect has any wound. 4. All cankers examined on the Apple were infected with *Nectria ditissima*. 5. These observations led to following further experiments. Thus:—A colony of the insects from a cankered tree was transferred to a healthy tree growing in an uncontaminated place; the insects were placed in the intentionally-made wounds. These wounds became cankered. An insect colony from a healthy tree in a healthy spot was brought into contact with intentionally-made wounds on a healthy tree in a healthy locality. Usually these wounds were not cankered. The experiments were repeated. The woolly aphid, which is thus an active agent in the transmission of canker in the Apple, appears then not merely to prepare the way for the *Nectria ditissima*, but even itself to actually implant it by transfer of the mycelium or the spores of *Nectria*, the injuries in which it is established being inflicted by it or accidental. It is interesting to note here, concerning the treatment of canker, that nicotine, tannin, and tannic acid were the most efficacious remedies. A solution was employed after the thorough removal of the affected parts. The use of tannic acid yielded specially interesting results.

TRADE NOTICE.

MR. CHAS. GETHING, late manager to Mr. Andrew Potter, at North Street, Wolverhampton, has commenced a business for the sale of tarpaulin, roofing-felt, rope, twine, and sacking. The title of the new firm will be that of Chas. Gething & Co., and the address 7, King Street, Wolverhampton.

ANSWERS TO CORRESPONDENTS.

BOILER FAILING TO HEAT 1200 FEET OF 4-INCH PIPE: *Henri*. In order to heat this amount of pipe efficiently, the surface exposed to *radiant* heat should be 26 square feet, whereas the boiler at present in use has only 13½ feet. The surfaces not exposed to *radiant* heat do not count for much. You must, therefore, secure a boiler with double this amount of heating surface, or insert another of equal power alongside your present one. The saddle, bell, or dome-shaped are good and rapidly heating boilers, having a great deal of surface exposed to radiant heat. The second and third are of cast iron. An "Anti-incrustator," for the removal of incrustation in boilers, is sold by the horticultural sundriesmen.

BOOKS: *A. C. H. W. Paul's Roses and Rose Culture* (Simpkin, Marshall & Co.). *The Book of the Rose*, by Rev. Foster Melliar (Macmillan).

CATERPILLAR: *F. Shannon, Kildangan Castle, Co. Kildare.* The caterpillar is a hibernated larva of the swallow-tailed moth (*Uropteryx sambucata*). Besides the Elder, it feeds also upon various fruit-trees and herbaceous plants, but does not occur in sufficient numbers to cause injury to them. *R. N.*

COLLECTIONS OF VEGETABLES FOR EXHIBITION: *Essex.* It is usual for framers of schedules to state the number of kinds that may be shown in collections, neglect to do this being a source of squabbling among the competitors; it is, moreover, fairer to the owners of small gardens, as they can thereby compete on more equal terms with those having larger gardens. The word "best" should not be used where a certain number of kinds is stated, it being sufficient to indicate 1st, 2nd, and 3rd prizes. The merits of the exhibits are determined by the judges. Of course, if "best" be used in the sense of the finest and largest collection, irrespective of the number and kinds of varieties shown, that is something very different, and it should be made quite clear in the wording of the schedule.

CYCLAMEN: *J. L.* The double flower is made up of two united.

FORCING LILY OF THE VALLEY: *A. H. H.* At the present season, this is a very simple matter, for as the crowns out-of-doors will soon begin to make growth, those introduced to the forcing-house will the more readily respond to the excitement of extra heat. In February greater care would be necessary, for the crowns are apt to produce flowers but no foliage when forced soon after Christmas. Your crowns if treated intelligently will not fail now to yield leaves and flowers. Place the crowns thickly together in wooden boxes, and work or shake amongst the roots a little light soil or Cocoanut-fibre; do not make this so firm that the heat cannot circulate freely amongst the roots. Let the boxes be placed over a bottom-heat of 85°, and in a moist atmosphere, keeping them dark (by the use of mats if need be) until the flower-spikes appear. They should be afforded supplies of chilled water rather frequently. Lilies of the Valley sell better in the market when accompanied with very pale, scarcely Pea-green coloured leaves; and growers do not permit them to be exposed to the light sufficiently long for them to acquire their true colour. The flower-spikes should be strong and of good length, as short, ill-developed specimens, such as would result from the employment of too low a temperature, are not at all popular. Should you wish to have a continuous supply of Lily of the Valley throughout the year, you will need to obtain crowns that have been retarded in a cool chamber, for use after June and for the succeeding six months at least. Much information respecting the treatment of these was given in the *Gardeners' Chronicle*, Nov. 3, 1900, p. 324.

FOREMAN IN A GARDEN LIVING IN A BOTHY: *J. R.* It is customary, under ordinary circumstances, to accept and give one month's notice.

INSECTS: *F. G. Larkin.* The eggs upon the twig are those of the Lackey Moth (*Bombyx neustria*, *Linn.*), which was illustrated in *Gardeners' Chronicle*, April 8, 1848, p. 236. The insect is a partially developed Lackey Moth. The caterpillars are injurious to most orchard trees, particularly Apples. At midsummer they are very hairy, about 1½ inch long, almost slate coloured, with two black spots on the head, and three orange-scarlet coloured stripes along each side, with a further blue stripe on either side. Remove any twigs upon which there are rings of eggs, and destroy them, also any cocoons that can be found, and webs with caterpillars in them. Shake the trees and destroy all caterpillars that fall from them. Spray the trees with a noxious liquid during spring.

LILACS IN POTS: *G. V. J.* Lilacs once forced into bloom should not be forced the next year, but grown on as described below for two years. In fact, except under very exceptional conditions of weather and situation, it is not possible to get Lilacs to flower again so well as when first brought over from the Continent. Assuming that no forcing has been practiced, but the plants (Continental) have flowered naturally in a green-

house, let them be hardened off before anything else be done. Then, having chosen a spot about the middle of a south border, away from all shadow thrown by east and west walls, shake off some of the soil, and loosen the outer roots, and having some loamy soil and manure handy, proceed to plant them at 2 to 3 feet apart, putting the loam and manure immediately round the balls; apply water, and make firm. These plants need only to have the weaker shoots removed. Give to each a short stake, and a tie to keep them steady. Put no other plants between the rows, as there must be nothing to shade the soil and keep it cool. The main idea is to obtain as much heat in the soil and in the air as is possible in this climate, as the means of obtaining short, stocky, well-ripened shoots. The surface must be kept friable with the hoe, and never allowed to cake. Water up to the beginning of August may be afforded in hot weather occasionally; not later, or the wood will ripen imperfectly. In a hot summer you may get shoots well set with flower-buds. Lilacs which have been forced should be hardened off, and similarly treated, except that the stronger shoots may be tipped. These plants would stand for two summers in the bed, and be lifted and potted in September or October of the second year, provided the show of flower-buds gives hope of good returns. No harm results to a Lilac bush if it flag considerably in hot weather—in fact, it seems to conduce to greater floriferousness and early ripening of the wood.

MARGUERITES: *Weekly Subscriber.* A variety of *Chrysanthemum frutescens*. Send when in flower.

MOSS FOR ORCHIDS: *A. H. H.* It would not be likely to answer the purpose nearly so well as sphagnum-moss, and would not retain moisture so well as that does. Sphagnum may sometimes be found in wet situations, on peaty soil; but if none exists in your locality, you will be able to get supplies through the horticultural sundriesmen.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*H. D. W.* *Marchantia polymorpha*, a Liver-wort.—*X.* *Cattleya Trianaei alba*; *Odontoglossum Pescatorei*.—*T. C. H.* 1, *Ruscus hypophyllum*; 2, *Rubus rosae-folius*.—*J. R., Essex.* 1, *Cornus mas*; 2, *Anthericum variegatum*; 3, *Cupressus Nothkensis*; 4, *Eschynanthus longiflorus*; 5, *Abies Pinsapo*.—*Mrs. McL.* *Pinus parviflora*, native of Japan.—*T. S.* *Acacia Drummondii*, *Lindl.*—*J. G.* *Bilbergia nutans*.—*Northleigh.* *Cryptomeria japonica forma elegans*.—*H. F. Cattleya Trianaei*, a good variety.

PEACH LEAVES: *Weekly Subscriber.* The appearance of the leaves points to sun-burning or the use of strong insecticides as being the cause of the browning.

PEAR MARIE BENOIST: *G. R. G.* An excellent dessert variety, in season from the beginning of January to the end of February. Raised at Brissac (Marne-et-Loire) by M. Auguste Benoist, a nurseryman; and named in compliment to his daughter. It fruited in 1863. The tree is a vigorous grower and a heavy cropper. We should suppose that your fruits, if now unripe, will not ripen. The tree should be afforded the protection of a wall. A description of the variety is given in *Hogg's Fruit Manual* (later edition), in *Dictionnaire de Pomologie*, and other works.

PEAR-TREE FRUIT SPURS: *Weekly Subscriber.* They have the appearance of having been injured internally by some outward application of an injurious substance. What this is we are unable to inform you.

PIECE OF GROUND 19 YARDS SQUARE, WALK 3 FEET WIDE ROUND IT, AND ON THE OUTSIDE A HEDGE OF LAUREL 10 FEET HIGH: *Old Reader.* Such a plot, if not shaded by high trees or big shrubs on the sunny sides, would make an admirable Rose-garden, with or without a Rose-bower in the middle. The avenue of Elms on the north side is an advantage, if the roots can be kept out of the plot. It might be furnished with posts at the margin, from which Roses on metal chains might depend, or pillar Roses or pyramids might be planted instead. The bower might be variously planted; we might suggest covering it with *Clematis indivisa*, for early display, intermixing it with Roses such as *Félicité-Perpétue*; the evergreen *Banksias*, yellow and white; *Madame Desprez*, or the *Boursault* or *Ayrshire* Roses; or it might be covered with *Gloire de Dijon*, the

climbing *Devoniensis*, and a few of the strong growing *Teas* and *Hybrid Teas*. Bedding Roses as bushes of distinct colours, mixed or in separate varieties, might be planted in the beds, with standards thinly interspersed among the dwarfs. Moss Roses. Scotch Briars, *Rosa centifolia*, Damask Roses, Provins Roses, and all fragrant varieties and species should be planted in beds or parts of beds by themselves, provided there is space for them. The garden thus planted would have a better effect when the Roses are in bloom than when filled with annuals, and if a large proportion of the Roses consisted of *H.P.'s*, the duration of the flowering period would be as long. The existing triangular-shaped beds, if of good size, would answer very well for Roses. Such a plot would make a garden of hardy herbaceous perennials, or one of subtropical plants, being warm and sheltered; or a place for the better class of flowering deciduous shrubs and small trees standing on turf; or an American garden, where *Azaleas*, *Rhododendrons*, *Heaths*, *Menziesias*, *Ledums*, *Kalmias*, *Pernettyas*, *Gaultherias*, &c., might be planted.

ROSES FAILING WHEN FORCED: *A. C. H.* You do not seem to understand the treatment required by a Rose that is going to be forced. Such plants must be well established in pots or in a border, and should be potted or planted early in the month of September preceding the forcing; and if the potting and planting were done in early summer it would be still better, in late autumn affording the plants a top-dressing of loam and dung, after removing the soil for an inch or two in depth. The added soil should be made firm with a rammer, and if a border by trampling it. You cannot plant Roses in December, either in pots or borders, and expect good results. Moreover plants which carried flowers in September, as you say that yours did, would not in any case flower well when forced, even if established, which yours were not.

SPIREAS: *Downfield.* The leaves look as if they had come in contact with a strong insecticide, or with some artificial manure. We see no fungus.

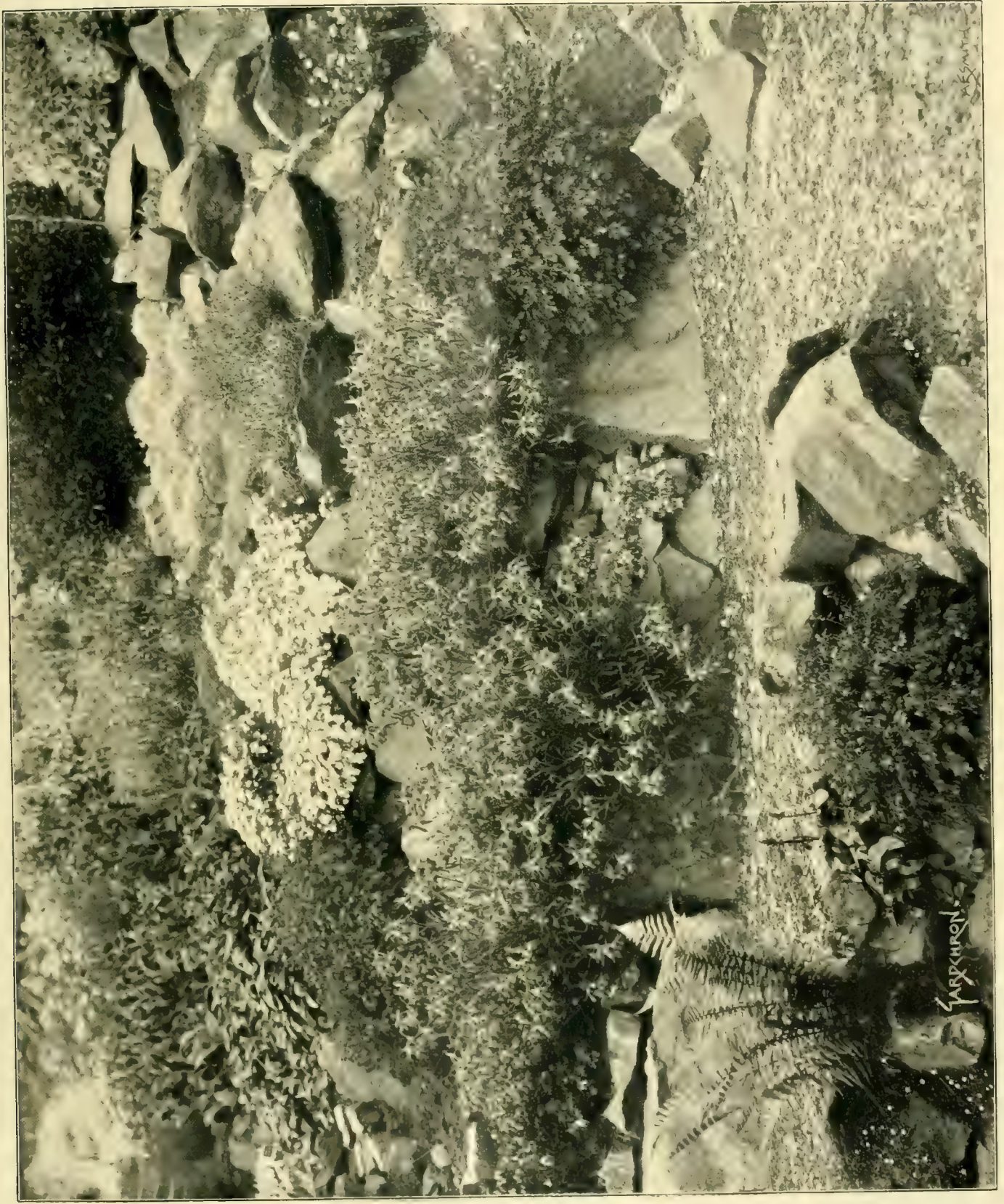
TOMATOS: *F. P.* The roots have perished owing to the soil having been kept in too wet a condition. The young plants are, however, making fresh roots from the stem, and if planted a little deeper or top-dressed they will probably recover, but the compost used should be a porous one, and do not afford water more frequently than necessary.

VINES DOING BADLY: *A. B.* No insects were found in the package, and we are therefore unable to name them. Can you send others securely packed in phials, pill boxes, or the like. The soil ought to be capable of supporting the Vines, although it is not of the best quality. The sample of the border soil contains an excess of vegetable matter, and it is not likely that it will remain in a healthy condition for many years. We suppose that the Vines got into a bad condition before being replanted, and are greatly, if not permanently weakened. Hence the weak roots and blind blossoms. It would be advisable to make a new border of pasture loam three-quarters, and one-quarter made up of lime-rubble, charcoal, and crushed bones, making it 6 feet in width as a beginning, and planting healthy young Vines in full growth in May. A small quantity of manure might be mixed with the soil with which the roots are covered, otherwise no solid manure should be put with the soil. Be careful to afford ample drainage, allowing the main drain to empty into a dry well filled with stones or brick-bats, or into some existing garden drain.

WHY DO THE LIMBS OF THE ENGLISH ELM FALL IN THE SUMMER MONTHS?—*Alpha.* It is probably due to the great mass of foliage drawing water rapidly and largely from the soil in hot weather, and in that way increasing the turgidity and weight of the wood and foliage, and overcoming the resistance offered by the fibres of the wood. No other tree grown in this country is liable to lose its limbs from the same cause to the same extent.

COMMUNICATIONS RECEIVED.—*Dr. Dammer*—*J. B.*—*T. A.*—*S. W. F.*—*W. Pettit*—*H. Lambert*—*H. T. M.*—*J.*—*D. S. F.*—*H. W. W.*—*J. O'B.*—*E. C.*—*C. H. P.*—*Midland Carnation Society*—*H. V.*—*Grantham*—*J. M.*—*R. S.*—*S. & Co.* (with thanks).—*J. C. A.*—*J. C.*—*T. E. T.*—*S. W. F.*—*S. B. D.*—*H. R.*—*Hayle*—*F. D.*—*Malta*—*H. E.*—*Ryde*—*H. H. D'O.*

(For Markets and Weather, see p. x.)



VIEW IN THE ROCK GARDEN AT MESSRS. RICHARD SMITH AND CO.'S NURSERY, WORCESTER.



THE

Gardeners' Chronicle

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CARNATIONS.

A SPECIAL STRAIN—QUALITIES—SOILS—PROPAGATION—CULTIVATION—PRODUCE—PRICE—DISEASES.

THE following notes on Carnations, the winter culture of which is such a feature of Riviera gardening, may be interesting to Carnation-lovers in England. As mentioned in a previous note, the cultivation of the Carnation to produce cut flowers from November to March has been carried to great perfection by market gardeners along the Mediterranean coast from Toulon to Nice. A special strain of Carnations has been produced, known as *Ellets remontant*, which throws up new flowering shoots continually as the old ones are cut. Many beautiful varieties are now in existence, which have been raised from seed, often produced by artificial hybridisation, and the list is constantly being added to, and new varieties fixed.

The qualities most desired are long duration of flowering, size and quality of blooms, length and hardness of the flower-stalk, the latter largely affecting the market value; those varieties which produce a long, strong stem,

terminated by a flower, are preferred, as they can be cut without sacrificing many unopened buds; and long-stemmed flowers are always more valuable for decoration than are short. The soils of Provence and Liguria are not all equally favourable to Carnation-culture, but nowhere do they succeed better than on the rather heavy calcareous soils in these districts, especially those of a reddish colour, such as we have in the particular garden under consideration.

Any good garden soil, if well manured, can be made to serve the purpose, but here as elsewhere, Carnations demand an open situation, at some distance from trees or shrubs.

Propagation is from seed for new varieties, sown in frames in the spring or autumn in light soil in a warm situation. The seedlings are pricked out when large enough, and shaded until established.

Layering is practised with especially good varieties, but is not adopted to any extent in market work. Practically, all the plants are grown from cuttings, taken during January and February. Young shoots are chosen, and are taken with a heel if possible, this being especially advisable with certain varieties. These are inserted in cold frames near the glass, in good light soil, and kept close, and shaded until struck, which is generally at the end of a month or six weeks.

After cultivation is either in the open air or under shelters of mats or glass, according to the means at disposal. Up to this point, the above applies to the general culture of Carnations. For special winter cultivation, the rooted cuttings are planted out in their flowering quarters in April and May, in well-prepared fresh soil, in beds of varying width, according to the sized lights available. Posts are driven in at some distance apart down the centre and along the sides, and a rough framework constructed about 5 feet 6 inches high in centre, and 3 feet at sides. This is a usual size, but measurements, of course, are quite variable.

The lights are hooked on along the centre ridge, and the sides filled up with either mats or smaller lights, sometimes roughly boarded. Details of size and construction vary, but the buildings are always as simple as possible, and not in any sense permanent erections. The lights are put on in October, and the plants, protected in this way, come into blossom rapidly. In very severe weather, an additional covering of mats is placed over the glass, and rolled up in the daytime.

Where only mats are to be used, the Carnations are planted in beds about 3 feet wide, holding two or three rows. Upright posts are driven in along the sides about 4 feet apart, on which are placed either strips of wood or light iron rods. Mats or tiffany are placed on these and rolled up every morning, and let down at night or in bad weather. This plan also succeeds admirably, as it is only the flowers, especially the buds, which require protection from frost or rain.

Under glass, air is admitted freely on fine days, and when water is necessary a copious supply should be given, also liquid-manure when the plants are coming into blossom. During the summer the young shoots are pinched to make bushy plants and retard flowering. In order to secure a good crop of flowers, it is necessary to begin cutting by the end of October or the beginning of November at the latest. In the neighbourhood of Toulon the growers sometimes transplant in order to delay flowering.

The system entails considerable work, as it is preferable to have young plants each year, and the plants require attention as to watering and regular supplies of liquid manure, to ensure a constant supply of fine blooms.

According to the season, Carnations are expected to give a yield of from 2000 francs to 6000 francs per hectare—i.e., about £40 to £120 per acre, or a little less, the price of the flowers varying from 10 centimes to 5 francs, or 4s. 2d. per dozen blooms.

The plants suffer a good deal from attacks of mildew, certain varieties being especially liable. In bad cases, Bordeaux Mixture is used for spraying, first removing as many affected leaves as possible. They are also liable to eel-worm attacks during the autumn from August to October. It is called by the peasants "la maladie," and justly dreaded, as little can be done except remove the affected plants and burn. The attack is shown by the plant drooping, and leaves turning yellow; the roots are checked in their growth, and wither up, and the plants rapidly succumb. Attempts are made to check the mischief by watering with tobacco-juice, or sulphate of iron, but no effectual remedy is known. *M. M. R.*

NEW OR NOTEWORTHY PLANTS.

EPIDENDRUM × TENNYSON (COOPERIANUM × O'BRIENIANUM).

THREE inflorescences, all varying in the colour and form of their flowers, are sent by the raisers, Messrs. Charlesworth & Co., Heaton, Bradford. In general appearance they bear a resemblance to *E. × O'Brienianum*, excepting in the form of the lip, which is quite different, little trace of the distinctly divided fringed lobes of the lip being remarked, as seen in *E. × O'Brienianum* (*radicans × evectum*); the rose coloured variety having the blade of the labellum but slightly cleft on each side, the reddish-orange one showing the divisions more openly, and the purplish-red-coloured form being most like *E. O'Brienianum* in colour, but with more widely separated lobes. The rose-coloured form has a whitish callus, with the raised line running from it to the front of the lip, as in *E. Cooperianum*, and this feature is displayed by the other two, though in these red varieties, it and the calli are of a yellow colour. *James O'Brien.*

NATURALISED NARCISSUS.

OUR illustration (fig. 86, p. 230), reproduced from a photograph obligingly placed at our disposal by Mr. Fitzherbert, shows how best to—

"Sow me the ground with daffadowndillies,"

that is to say, in the pleasure-ground, rather than in the dressed garden, where they speedily look untidy and out of place. At Trellisick, the seat of C. D. Gilbert, Esq., the Narcissus seem as much at home as they do at Les Avants, above Montreux.

ORCHID NOTES AND GLEANINGS.

CATTLEYA TRIANAII DELICATA.

A TWO-FLOWERED inflorescence of a charming form with flowers of an uniform delicate Peach-blossom colour, the front of the lip being slightly darker than the sepals and petals, is sent by Mr. R. Cairns, gr. at Balruddery, near Dundee. The flowers are large and finely formed, and have the appearance of those of *Cattleya Schroderae* in colour and in other particulars, though the texture of the flowers and the form of the labellum is different, and the tint of yellow in the lip lighter. *Cattleya Trianaei* is

one of the showiest of winter-flowering Orchids, but the quality of the flowers of the same plant often varies from year to year, according to the brightness or dulness of the season.

LYCASTE SKINNERI.

In the issue of the *Gardeners' Chronicle*, March 9, p. 150, some grand flowers of this fine species, sent by Joseph Broome, Esq., Llandudno (gr., Mr. A. C. Axtell), were mentioned, and remarks on culture requested. Another and still larger and more beautiful flower is sent by Mr. Broome. Its sepals and petals are broadly ovate, the former blush-white, and the latter rose-crimson, darkest on the inside; the showy labellum is blush-white with crimson spots.

Mr. Broome writes:—"We have grown these since they were imported, early in 1898, in an

was lost, but from its richly-coloured flower, still perfect at the time of our visit, *C. × Harrisianum* superbum was probably one of them. With open flowers or in bud, we remarked with it plants of *C. × macrochilum giganteum*, *C. × Winneanum*, *C. Dayanum*, *C. exul*, and a few others. The collection contains a number of *Cypripediums* of the finest quality, and crossing and raising is still being actively pursued. Mr. Norris, the gardener at Lubeck House, showed us numbers of crosses from which he expects good results. These plants vary from the smallest size to those of good size, and flowering age. Hybrid *Dendrobiums* come in for as much favour as those, and some promising examples of crosses yet unflowered are making satisfactory progress. The flowering of a number of a very remarkable cross, said to be between *Dendrobium Brymerianum* and *D. nobile*,

son. With regard to the latter, it is observed that on very dull days its flowers are partially closed, but on bright days the segments fully expand, and the flower gives off its delightful fragrance to a more marked degree than it does in sunless weather. *D. × Wiganiae*, *D. Brymerianum*, and others also contribute to the very interesting and pretty display.

CYPRIPEDIUM × HITCHINSIE (INSIGNE ♀, CHARLESWORTHII ♂).

A flower of this pretty hybrid, which was first shown by A. S. Hitchins, Esq., Clyton, St. Austell, at the Royal Horticultural Society, November 7, 1899, is sent by W. M. Appleton, Esq., Tyn-y-Coed, Weston-super-Mare. Like other hybrids of *C. Charlesworthii*, it has the broad, symmetrical proportions in all the parts of the flower as seen in



FIG. 86.—NARCISSUS NATURALISED, IN THE PLEASURE-GROUNDS, TRELLISICK, CORNWALL. (SEE P. 229.)

intermediate-house. They are potted in a compost made up of one-half fibry-loam, and the rest of peat, moss, and sand, with small pieces of fine charcoal added. The pots are crocked about one-third the way up, and the plants are freely watered when growing. We never attempted the decomposed leaf-soil culture advocated by some."

ORCHIDS AT LÜBECK HOUSE.

A very interesting collection, especially of hybrids, has been got together by Frank A. Rehder, Esq., at Gipsy Hill, and from the great interest which he takes in his Orchids, we may predict for him a prominent place among amateur cultivators of Orchids. Some good novelties have already been flowered there, and the novelties in *Cypripedium* shown by Mr. Rehder included the pretty and singular *C. × Favarger* (*concinnum × Charlesworthii*), the handsome *C. × Mrs. Rehder* (*Argus × Rothschildianum*), the finely-marked *C. × Miss Rehder* (*Argus × hirsutissimum*), and *C. × Ernesto*, a hybrid to which an Award of Merit was made when shown at the Royal Horticultural Society on March 12. The record of the parentage

is looked forward to with interest. The larger plants of this effort at crossing are approaching flowering age. In habit there is close resemblance to *D. Brymerianum*, but the flowers will probably afford evidence of the influence of *D. nobile*. The result will be highly interesting, for, so far, *D. Brymerianum* hybrids have not yet flowered, though Messrs. F. Sander & Co. are said to have plants of *D. Brymerianum × D. Dalhousieanum*, which are growing in a satisfactory manner. In a high warm-house a fine show of *Dendrobiums*, chiefly in baskets suspended from the roof, was noted. The largest and showiest plants are the varieties of *D. nobile*, the two extremes in colour being represented by the large purple-flowered *D. nobile nobiliss*, and a charming plant of a very pure white *D. nobile*, with no other colour than a slight primrose shade in the disc of the lip. In the form of its flowers it is of the true *D. nobile* class, while some of the white *D. nobile* have the appearance of *D. Hildebrandi*. Other hybrids are in bloom, three of the prettiest being *D. Owenianum*, *D. × Sibyl* (*bigibbum × Linawianum*), and *D. × Bryan* (*luteolum × Wardianum*), all raised by Mr. Cook-

C. Charlesworthii. The upper sepal is white, with a small yellowish base; the lower and central portion are decorated with bright purple spots, which diminish in size as they approach the margin. Lower sepal yellowish, with narrow purple lines; petals and lip yellowish, with pale purple veining and tinge. Staminode sulphur-yellow, with a darker yellow boss in the centre. It is a neat flower, and very attractive.

CATLEYA TRIANÆI "GODIVA."

This fine form is beautiful when tried by the highest standards of the florist, and we have to record the flowering of the variety for the first time in the collection of Geo. Singer, Esq., Coundon Court, Coventry (gr., Mr. Collier), who kindly sends a flower for inspection. The segments of the flower nearly fill in a circle; the petals are nearly as broad as long, and the finely fringed and crimped front of the lip is also circular in outline. The sepals and petals are of a silvery-white tinged with peach-blossom colour; the base of the lip white, tinged and veined on the outside with light purple. The disc of the lip is orange-coloured, with fine white

lines radiating from the base, and the front ruby-purple, the colour getting lighter towards the margin and edges of the frilled side lobes.

DENDROBIUMS FROM WESTONBIRT.

From Captain Holford's Orchid-houses at Westonbirt, Tetbury, comes a fine set of flowers, cut by Mr. A. Chapman, his gardener, as samples of the many good *Dendrobiums* in flower there. The blooms sent are interesting as examples of what good cultivation can produce, and also as showing the important part which *D. Findlayanum* has

handsomely tinted of a bright magenta colour; and *D. x Sibyl*, that charming hybrid obtained by Mr. Cookson by crossing *D. Linawianum* with *D. bigibbum*, with its perfectly shaped white flowers tipped with carmine-rose, is, perhaps, the most attractive of all.

DASYLIRION ACROTRICHUM.

This species of *Dasyllirion* is, when in flower, an imposing looking plant, and one not often met with in Northern Europe. It is a native of Mexico, and

that has been noted with these plants is the appearance of branching, which often occurs after the first flower-spike has been produced. Nearly allied to this genus is *Nolina*, of which there exist about twelve species. True *Dasyllirions* number about eight. *D. laxiflorum*, Baker, and *D. Hookeri*, Baker, are considered the connecting link between the two genera. The specimen, of which an illustration (fig. 87) is now given, is a male plant, bearing two finely developed flower-spikes of more than 10½ feet in height, which endure for over a year. The specimen is branched, and carries two crowns, each of which measures about 4½ feet in diameter. The stem is nearly 4 feet high, and 9 inches in diameter. The leaves are 27 inches long. Its native habitat is Mexico, where it is found in rather dry regions. *E. B. B., Berlin.*

SPRING FLOWERS IN THE SOUTH-WEST.

BAD WEATHER—A LATE SEASON—A SUCCESSION OF VISITORS.

The present season has, owing to the inclement weather, been a very backward one in South Devon, the generality of flowers having been much retarded, although, in sheltered sites a certain amount of bloom has been in evidence from the opening days of the year. A snowfall in January, preceded by a sharp frost, worked havoc with many tender subjects, a large plant of *Datura sanguinea*, then in bloom, being killed; while Ivy-leaved *Pelargoniums*, with which the walls of many houses are draped, suffered badly, and in some cases *Cordylines* were damaged. Cold weather, alternating with rain, continued through March, the rainfall at Kingswear on the 20th measuring over 2 inches, a total for twenty-four hours almost unprecedented, even in South Devon. This was followed by bitter north winds, accompanied by snow squalls and sharp, nightly frosts, so that it is but little wonder that now, on the verge of April, vegetation should wear an almost February-like aspect.

In January the Winter Aconite spreads its gold beneath the trees, and early in the month *Agathæa celestis* was flowering in a warm nook. *Anemone blanda* unclosed its petals, varying in colour from deep purple to almost white, and now and again in sunny wall-borders a few scattered blossoms of *Anemone coronaria* and *A. fulgens* were to be descried. The Cape Pond Weed (*Aponogeton distachyon*) showed here and there a floating, white, Hawthorn-scented bloom; and *Coronilla glauca*, one of the most valuable winter-flowering small shrubs in this district, was yellow with blossom; while *Cyclamen Coum* was blooming beneath the tree-boles on a bank; and, in the crannies of a wall, *Erigeron mucronatus* still bore its Daisy-like flowers. The Christmas Roses produced their pure white cups; while the fragrant *Iris stylosa*, both in its lavender and white forms, continued to flower where not exposed to the full rigour of the weather; and *Iris alata* disclosed its azure-blue blossoms. *Narcissus minimus* was the first of the Daffodil family to show its flowers, and at the opening of the year a stray bloom was here and there held by the *Mesembryanthemums* on a rocky verge. The Winter Heliotrope (*Tussilago fragrans*) bore its scented flower-heads in rough corners, and the Periwinkles brightened many a bank with their stars; *Vinca acutiflora* being still thickly covered with its faintly-tinted white flowers. *Camellias* commenced to bloom early in the year, and the Winter-Sweet (*Chimonanthus fragrans*) was in full flower in January. Grown as a lawn shrub, with a background of evergreens, and with its leafless shoots thickly studded with pale yellow blossoms, the *Chimonanthus* has an attractive appearance, apart from its value in perfuming the air, especially where it assumes large dimensions, as it does in the south-west, in which locality I know of a bush over 12 feet in height. Another handsome winter-flowering shrub is *Hamamelis arborea*, whose quaint, deep-yellow blossoms, like strands of



FIG. 87.—DASYLIRION ACROTRICHUM.

taken in securing some of the handsomest of winter and spring-flowering *Dendrobes*. Among the finest are *D. x Cybele grandiflorum* (*Findlayanum x mobile*), a large and finely coloured flower; *D. x Clytie* (*Findlayanum x Ainsworthii* Leechianum), and *D. x Rainbow* (*Findlayanum x Ainsworthii*), two of the fine *D. x chryso-discus* class, which originated with Sir Trevor Lawrence, and has proved one of the most beautiful and variable of hybrid *Dendrobiums*. Also very fine are two of the best of the *D. x Euryalus* class, viz., *D. x Apollo grandiflorum* and *D. x rubens grandiflorum*. *D. x Ainsworthii intertextum* has yellowish cream-coloured flowers, with a dark claret-coloured disc; *D. nobile Sanderianum* is fine in shape, and

does not need great warmth, which enables the plants to be employed for garden decoration during the summer months. In the South of Italy it does well outside the whole year, and may be found there in almost every garden. The prettiest species is doubtless *D. quadrangularis*, S. Wats., which possesses a fine crown of elegantly recurved leaves, which are very long narrow, and serrated at the base. All the *Dasyllirions* are good decorative objects, and worthy of a place in the flower-garden.

The idea that the plants die after flowering or after producing seed is erroneous, for they live on to flower again; it is, however, probable that a weak plant may succumb after flowering. A fact

twisted gold wire, render it a conspicuous object. *Daphne Mezereum* bore on its stiff shoots crowded flowerets, purple and white, and, in a certain highly favoured garden, *Daphne indica* spread its rich odour far and wide; while the bush Honey-suckles, *Lonicera fragrantissima* and *L. Standishi*, added to the list of scented January shrubs. Early in the month, the charming *Prunus Davidiana*, by far the first of its tribe to flower, opened its blossoms; the white form appears to be the most floriferous, but both are equally lovely. *Clematis balearica*, or *calycina*, bore a profusion of its greenish-white, purple-spotted flowers, and *Jasminum nudiflorum* was brilliant with countless golden stars; while on a northern wall, on the 1st of the year, a *Lapageria*'s pendent blooms were still hanging in untarnished beauty.

In February, the white *Arabis* commenced to flower, and the *Chionodoxas* to spread their blue upon the beds. Though smaller than *C. Luciliae*, *C. sardensis*, on account of its deeper tint, is far more ornamental in the mass. *Chionodoxas* require some time to become thoroughly established, and rarely attain their full vigour for a season or two after planting. When in full strength even *C. sardensis* grows to a height of 8 inches, and bears twelve or more flowers on a scape, seeding so freely that the surrounding ground becomes full of young plants. The larger forms, *C. Alleni* and *C. grandiflora*, are handsome, the faint blue of the latter being especially charming. *Colchicum crociflorum* and *C. libanoticum* were both in flower, as well as *Crocuses* in variety, amongst the species being *C. aureus*, *C. Imperati*, *C. Korolkowi*, *C. Sieberi*, and others. *Dondia epipactis* opened its strange blooms of green and gold, and the little *Gagea lutea*, a bulbous plant which occurs in some districts in England, its yellow flowers. *Hepaticas* commenced to blossom, the pale blue *H. angulosa* being very beautiful. *Iberis correaefolia* showed the dead white of its first flower-heads, and the delightful Violet Cress (*Ionopsidium acaule*), which had been in bloom since December, despite the inclemency of the season, spread a thick mantle of lavender and white over the border. In many gardens this charming little annual increases readily from self-sown seed, but where it does not it is well worthy of introduction, since it is of such lowly growth that it forms an admirable carpet for the bulbs of early spring. Of *Iris*es, *I. Bakeriana*, *I. Danfordi*, *I. histrioides*, *I. Krelagei*, *I. reticulata*, and *I. persica* flowered, and the spring Snowflake (*Leucojum vernum*), three weeks later, came into bloom.

In a neighbouring garden are some particularly precocious plants of the summer Snowflake (*L. aestivum*), that invariably flower at the same time as their spring sisters, and many weeks before the main army of their kind. The Musk Hyacinth (*Muscari moschatum*) produced its dingy flower-spike, whose scent is, however, almost unrivalled in the garden, comparing in this respect with another sober-coloured flower, the bright-scented Stock (*Mathiola bicornis*). Early *Narcissi* commenced to bloom before the month was far advanced, the variable but ever beautiful *N. pallidus præcox*, which in many cases proves exceedingly difficult to cultivate satisfactorily, flowering vigorously on the grass. *Polygala chamæbuxus*, and its still more attractive form *P. c. purpurea*, became clothed with flower, clumps of the delicate *Romulea pylla* glistened satin-white, with *Crocus*-like, golden-centred blossoms; and *R. bulbocodioides* also bloomed, together with *Sternbergia Fischeriana*. Snowdrops spangled the confines of a wood-shrouded lakelet with their pure, drooping chalice in countless thousands, and *Triteleia uniflora* opened its white stars; while *Erica carnea* glowed with its warm tint, and tall bushes of *Erica codonodes* 8 feet and more in height, became day by day more perfect pillars of pink-flushed white. *Cornus mas* bore its yellow flower-whorls on naked branchlets, and in mid-February a white seedling of *Cytisus præcox*, which usually opens its first flowers, in a sheltered garden, before the close of January, began

its bloom display. *Nuttallia cerasiformis* perfected its drooping clusters of white, scented flowers; *Prunus Pissardi* and *Pyrus japonica* expanded their white and crimson blossoms, and, when the weather permitted, *Rhododendron Noleanum*'s bright flower-trusses shone unmarred.

In March, flowers that opened a few tentative blossoms in January and February, break into fuller bloom, but in the present "moon of Daffodil and Crocus," the climatic conditions have been so abnormally unfavourable, that most have delayed their fuller display until the succeeding, and we may trust more genial, month. Still, there are a few new arrivals to chronicle. In a sheltered corner *Adonis vernalis* expanded its first yellow blossom, and *Anemone apennina*, *A. pulsatilla*, *A. ranunculoides*, and the loveliest of all the *Anemones*, the silver-blue *A. Robinsoniana*, entered upon their season of bloom, but with unwonted diffidence for the time of the year. The *Aubrietia* began diffidently to sprinkle its hanging greenery with purple and rose flowerets. Scarcely a single great golden star appeared on the *Doronicums* in place of the half-dozen that the close of March usually sees, and the Crown Imperials are fully three weeks late. The *Erythroniums* have bloomed freely, *E. revolutum*, in an adjacent garden, being very fine. The *Gentianella* came into sparse bloom, and the Snake's-head *Iris* (*I. tuberosa*) bore its velvety black and pale green blossoms, with their delicate perfume. This *Iris* is found growing wild in some parts of Devonshire.

The Lenten Roses, though showing a few flowers as early as January, did not reach the zenith of their display until March, when the show in Mr. Archer Hind's garden at Coombe Fishacre was extremely fine. Mr. Archer Hind has for many years been engaged in hybridising these Hellebores, and has obtained many very beautiful forms, ranging in tint from deep plum colour to pure white, some of the latter being absolutely free from the slightest suspicion of green on the petals—a rare occurrence with these flowers—while many of the seedlings are exquisitely spotted, and of true cup shape.

In the same garden and adjoining field, Lent Lilies are naturalised. The majority of these are considerably larger than the ordinary form, having been selected for their size at the time they were collected. Many are double, the soil appearing to favour this monstrosity, for some of these bulbs, being sent to another noted gardener, became single after a little while, but upon being returned to Mr. Archer Hind, regained the double form in a few seasons.

Hyacinthus azureus and some *Muscari* came into bloom at the end of the month, and at that time the flowers of *Myosotis dissitiflora* were gradually changing the pink tint of their earlier blooms to blue. *Omphalodes verna* and its white variety are producing a few flowers, and in a rock-garden *Saxifraga Burseriana* and *S. Boydi* have bloomed. *Scilla bifolia* and *S. sibirica*, with their white forms, are now in flower, as is *S. taurica*, and the refined *Thalictrum anemonoides* is bearing its delicate white flowers. Violets in the open were hardly used by the weather, and lost almost all of their older leaves, but fresh ones have taken their place, and the plants, both single and doubles, are now in good bloom. The Almond-trees make pretty pictures, especially when seen against a dark background. *Azara microphylla* is bearing its inconspicuous fragrant flowers; and *Clianthus puniceus*, upon a south wall, is showing the scarlet of its earliest blossom. The *Kerrias*, single and double, have, here and there, an expanded orange blossom; the *Forsythias* are already yellow with bloom, and *Pieris floribunda* is white with its crowded racemes; while *Pyrus Maulei* is bright in its orange-scarlet. *Stauntonia latifolia*, which has for many years past opened its deliciously-perfumed bloom-clusters in March, often early in the month, had not, on the 30th, unclosed one flower. S. W. F.

ALPINE GARDEN.

CAMPANULA PULLOIDES.

CAMPANULAS, tall or dwarf, are almost all beautiful, and any meritorious addition to their number is most welcome. This small-growing, alpine form, which originated in the garden of Mr. T. H. Archer-Hind, at Coombe Fishacre House, South Devon, is a decided acquisition, and its appearance after the past winter shows one that it may prove to be a good and trustworthy rock plant, although its small size and its relationship to *C. pulla*, which is not a success everywhere, leads me to think it apt to prove troublesome. It is, however, coming up well this spring; much better, indeed, than the forms of that other hybrid, apparently of the same parentage, *C. G. F. Wilson*, whose various forms have given rise to so much argument among growers of alpine as to their correct naming. So far as I can ascertain, *Campanula pulloides* has for its parents *C. pulla* and *C. turbinata*. It bears much resemblance to one or two of the forms of *C. G. F. Wilson*, but is of a deeper colour, and possesses rather smaller flowers, but with the semi-drooping habit of the most distinct of these.

PRIMULA MEGASEE-FOLIA.

As a specimen of this new *Primula* has recently come into my possession, I was glad to observe a good illustration of the plant exhibited from Miss Willmott's garden in the *Gardeners' Chronicle* last week. On receiving the plant I feared it might prove tender, but Miss Willmott has courteously informed me that she expects it will be hardy, and the improvement observed in its foliage since it has been in the garden gives me hope that it will withstand the rigours of our climate, especially as such a doubtful plant as *P. Poissoni* can be successfully grown. S. A.

RAMONDIA PYRENAICA.

A BEAUTIFUL ROCK PLANT—ITS HISTORY—AN OLD INHABITANT BUT LITTLE KNOWN—HOW TO GROW IT—ITS WHITE VARIETY.

Ramondia pyrenaica has long been familiar to British gardeners, so that it is rather surprising to find it so little grown in ordinary gardens. It is, practically, only seen in the gardens of those who are specially interested in hardy flowers. Its history in our British gardens dates as far back as the days of Parkinson; how long it was introduced before his time, we know not. In his day it figured as "*Auricula ursi flore cœruleo folio Boraginis*. Blew Beares Eares with Borage leaves." That father of British gardening gives a description of our plant in his *Paradise*. Later it was known as *Verbascum Myconi* (*Linn. Syst. Veget.*, ed. 14). It was also known as "*Cortusa foliis ovatis sessilibus*" (*Linn. Hort. Cliff.*). Under the name of "*Verbascum Myconi*: Borage-leaved Mullein," a good figure appeared in the *Botanical Magazine*, vol. vii., t. 236. It has also figured as *Chaixia*, but it is to be hoped that its present name of *Ramondia*, given in honour of M. Ramond, the French botanist, will not be hastily superseded to the confusion of gardeners in general. So familiar is *Ramondia pyrenaica* to many of us that we are prone to think that it is equally well-known to all who like outdoor flowers. That this is not the case one has often found, so that I may be excused for giving a brief description of the *Ramondia* in plain terms.

It makes a rosette of deep green wrinkled leaves, which are produced quite close to the surface of the soil, and lie almost flat upon it. They are ovate in form, and are prettily crenated, and are covered with short hairs. The flower-stems are usually 3 inches high, and carry from one to five pretty, purple-violet flowers, which have been well described as resembling those of a Potato. Its leaves carry with them that resemblance which made Parkinson speak of it as having Borage leaves. The drawing in Maund's *Botanic Garden* gives one a better idea of the general aspect of this *Ramondia* than that in the *Botanical Magazine*.

The comparative scarcity of *Ramondia pyrenaica* in gardens seems to be due to an unfounded idea that it is a difficult plant to grow, and that it is only to be had in bloom if given special treatment. I know gardens in which it is grown admirably under a hand-light, and kept covered with this almost all the year, air, of course, being admitted on favourable opportunities, but without absolutely removing the top of the hand-light. The glass is also kept covered with whitewash or other shading material in summer. The plants one has seen thus grown were certainly very fine, and bloomed freely; but it seems needless labour to be at such pains, when equally good results can be obtained without all this trouble. The finest plants I have ever observed were growing on the north side of a low fence, in a garden in the north-west of England, and on a slightly sloping bank,

north, but it is also said to be found in groves in the same mountains, and in Piedmont. In both cases it is evident that it has a liking for shade—a liking we ought to study in planting. For its cultivation I prefer a peaty soil. *Ramondia pyrenaica* is of but slow growth, and I should hardly recommend the amateur to trouble to raise it from seeds when plants can be had at a moderate price. That is, however, a good way of raising a number of plants when time is of little object. The seedlings should be pricked off early, and grown on in separate pots.

The white variety of the *Ramondia* is a nice plant, but unfortunately it is scarce, and seedlings that are sometimes sold are not quite of the same purity as the parents. It is a little expensive, but it is worth its price for including in a choice collection. *S. Arnott, Dumfries.*

mentosa and *A. lanuginosa*—both very good when flowering well—require the protection of a glass at Edge from October to April. *A. Laggeri* is given in some botanical works as a variety of *A. carnea*, but is much more flowery and more spreading than that species, and has finer leaves, resembling in general appearance a miniature plant of the common Thrift (*Armeria maritima*). *C. Wolley Dod, Edge Hall, Malpas.*

ERANTHIS CILICICUS

Appears to be a new addition to winter-flowering Aconites, promising to surpass *E. hyemalis* in free flowering, and in greater adaptability to various kinds of soil. In other respects the plant is only a repetition of the common winter Aconite, but, if it retains its alleged good qualities will come into favour. Planted in the turf of the wild garden, hardy fernery, on sunny banks, or in a shrubbery where the plant can get sunlight, its golden cups will always be a delight in the winter months. *J.*

ODONTOGLOSSUM CRISPUM PURPURASCENS.

THIS very handsome and distinct *Odontoglossum* (fig. 88) gives a good example of what clever cultivation can accomplish in bringing out all the good qualities of a flower. It was first exhibited by Sir Trevor Lawrence, Bart. (gr., Mr. H. W. White), at the Royal Horticultural Society on June 27, 1899, when the Orchid Committee gave it an Award of Merit. At the meeting held on March 26 this year, it was again shown, and culture having greatly improved it, a First-class Certificate was deservedly awarded. It belongs to a very distinct and small section of spotted *Odontoglossum crispum*, and the finely formed flowers are heavily tinged with rose-purple, the colour on the lower sepals obscuring the reddish-purple spotting. The white labellum has a yellow crest with a few reddish lines, and some larger reddish blotches in front.

FORESTRY.

MISTAKES IN PRUNING AND PLANTING.

It is extraordinary the tendency shown by owners of woods and their agents to prune their young plantations by trimming off the lower branches. This is especially noticeable in the case of Larch, and I have seen much of it lately on estates widely apart, so that I have come to believe that it is pretty general in England. It is a pure rule-of-thumb practice so far as I can learn, and is frequently suggested, I believe, by seeing the dead lower branches on the trees that would be shed in due course if they were let alone. The proprietor, however, takes it into his head that these branches should not die; "they look bad," he says, and so he trims them off, and to prevent further decay, he thins the plantations to give those left more room. I saw, lately, a wood of many acres that had been treated in this way. The woodman said his employer's orders were imperative, and "he reckoned to know about woods." In this wood the trees had been planted in straight rows, Larch and Scotch, and the pruning had a curious effect. The margin of the wood had no other shelter than a wire fence afforded, and in walking down the road the traveller could see right through from end to end between and under every row of trees, and although the latter were about 20 feet high, the grass below was quite rank and abundant—a sure sign of over-thinning itself. I have rarely seen such a miserable-looking crop. The disease had attacked the trees to a considerable extent, and had spread quickly since the pruning had been done, the fungus entering at the wounds where the branches had been cut off, and these instead of healing over had remained open and become black, sunken spots, giving the trees a very unsightly appearance. The branches had been cut off for



FIG. 88.—ODONTOGLOSSUM CRISPUM PURPURASCENS.

with large stones between the plants, so arranged that the leaves touched these and not the soil. I think *Ramondia pyrenaica* is all the better for having its leaves resting on stones, instead of on the bare soil, as in times of excessive rainfall I have seen the ends of some of the leaves decay from damp, to the disfigurement of the plant. In a damp district I have seen the *Ramondia* doing capitally on a rather dry wall, with its roots deep in the crevices; it was on the side of the wall, a position which suits the plant well. In this wall, self-sown seedlings had sprung up and attained flowering size; though, in some cases, much stunted in growth from the small space, and the comparative absence of plant nutriment. A properly built double wall with earth between would be better for the plant, than one of stone or brick with few and small crevices for the plant. This *Ramondia* is, in reality, with us a plant to place in a vertical position, and not on the flat, though I have here a vigorous and healthy specimen on the level with stones below the leaves. We are told that its native home is generally in steep cliffs of the Pyrenees facing

ANDROSACE SEMPERVIVOIDES.

This species (Jacquemont: see Hooker's *Flora of British India*, vol. iii., p. 497) is said to be a native of Western Tibet and Kashmir, altitude 11,000 ft. It seems to be rare in cultivation, but is perhaps the most satisfactory species I have tried of this rather troublesome genus. It is now the third year I have had it, having got it from a nursery in Bavaria. It answers to the description referred to above, except that in cultivation at Edge, instead of the rosettes being $\frac{1}{2}$ inch across as stated, they are often fully 2 inches. It is grown on a barrow-shaped mound, composed of hard burnt clay, coated with 6 inches of very finely-riddled Cleve Hill granite. It is perfectly hardy, having treated with contempt the recent severe frosts. The flowers are pink, produced in May, and are not unlike those of *A. Laggeri*, now flowering on the same structure, which I was taught to make by Mr. A. Bulley, of Neston, and find admirable for many difficult alpinists. *A. Laggeri* (Huet) comes second in my estimation amongst the members of the genus, standing exposed through winter, whilst *A. sar-*

about 5 feet up, and carried out of the wood—an expense that need never have been incurred, and which would never be recovered. The rows ran nearly north to south, and between every two rows of trimmed trees a channel was provided, along which the cold, keen wind blew from end to end, chilling everything it touched. We halted to sit down somewhere to eat our lunch, but a seat free from a keen draught could not be found in the plantation. Nowhere is the draught so keen and persistent as in a wood where there is no under-wood, and where the trees are divested of their lower branches. Standing in such a wood on a cold day is like standing between two doorways, and the ill effects of the constant current on young trees are incalculable. You may plant trees almost anywhere, and expect a good crop if you keep out draughts, cold winds, and prevent excessive radiation from above by overhead canopy; but cold winds are most to be feared. This is "nursing" in the right sense. A good deal depends on how a wood is planted, so far as growth is concerned; but when the trees are in rows, the dead lower branches are a sufficient obstruction to winds. Given a dense belt at the margin, with the dead lower branches left on the trees inside, and a young plantation is about as comfortable as it can be; and if you want proof of it, it will be found in the way pheasants and other game collect in such a place.

It is difficult to form young plantations, except by planting in rows in some way. It can be done in the informal method if you have good men, but without regular lines of some sort men get into confusion, and a very irregular plantation is the result. I saw an attempt at planting in an informal manner not long since, and a fine mess had been made of it. Three feet was the distance aimed at, but it was as often 6 feet, and sometimes less than 3. When only one sort of tree is put in, and the areas are not large, informal planting may succeed, but when regularly apportioned mixtures are attempted, lines must be set out. My own experience is, that lines running east and west are best, with the trees alternating in the rows—that is, the tree in one row opposite the space in the next row, and so on. The prevailing gales are from the south-west and north-west, and the coldest winds come from the north-west, north, and north-east; hence, rows running east and west, and planted as above in the rows, present their most protected side to these points. This protection is of great importance while the woods are young. It does not matter so much how the rows run after the trees have grown up, but protection at the beginning is of much importance. *J. Simpson.*

THE WEEK'S WORK.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. L. MEASURES, Esq., Cambridge Lodge, Flodden Road, Camberwell.

Disas.—The present season is a suitable time to repot *Disas*. The garden hybrids, with but few exceptions, are more tractable, and can be grown with better results than is the case with the species generally. Any repotting that may be required among these also, should have attention at the present season; avoid repotting for potting sake, and where the compost is in good condition, and the plants growing satisfactorily, by all means let well alone.

Cymbidiums.—One of the best species of the genus is the very beautiful *Cymbidium eburneum*, an early spring-flowering plant, whose flowers last for a long time in perfection. The plant thrives under slightly warmer conditions than those usually recommended for most *Cymbidiums*, namely in the intermediate-house, or other house in which a temperature of 55° to 60° is kept during the winter. Here, with a more liberal amount of moisture at the roots than is afforded the plants when grown under cooler conditions, the plant flowers finally. When repotting the plant after the flowers have faded,

this larger amount of root moisture should be borne in mind, and a considerable quantity of crocks, rough sand, and charcoal incorporated with the potting compost. The drainage should also be clean and ample in amount. About London and other smoky cities, it is not advisable to use a close adhesive or heavy loamy compost, as it causes black spots on the leaves, whilst in a purer air heavy loam has no such bad effects. In the neighbourhood of smoky towns, if loam is employed at all in the compost it must be in small quantity only, and particular attention must be paid to the application of water during the winter months. Two very desirable additions have been made to *Cymbidiums* in recent years, namely the crosses of *C. eburneo-Lowianum* and the reverse cross *C. Lowio-eburneum*, both of which have been derived from the species indicated by the names. These crosses are intermediate between the parents, they possess vigorous constitutions and are free flowering, the blossoms lasting for some weeks in perfection. I find that both succeed during the winter in the intermediate house. They should be brought well up to the roof, and shaded sufficiently to prevent the scorching of the foliage at all seasons. These plants make a large quantity of roots, and require therefore rather large pot room; the compost should be of a porous description, and the drainage liberal in quantity. *C. Lowianum* thrives admirably under cooler conditions, and the flower spikes at this date are in a forward condition. When the flower-spike has lengthened, and the buds are so large that the racemes are weighed down, they should be secured to sticks. Under cool treatment, and with free ventilation and strong light, the substance of the flowers is increased and their colour heightened. For durability of bloom, with the exception of the *Epidendrum vitellinum*, *C. Lowianum* has no equal. Placed in a cool room or conservatory it will keep in bloom for months, though it is advisable to remove the flower-spikes after a reasonable time, or the stamina of the plant will be too much exhausted. If a plant of this species is not flowering, any necessary removal of old compost may be carried out, but repotting should not be performed till such time as new roots appear, that is later in the year, as the plants are then not so liable to shrivel, and they establish themselves more quickly. The remarks stated above in respect to the potting compost apply likewise to *C. Lowianum*.

Heating, &c.—The long period of cold winds and frosts has necessitated the use of a considerable amount of fire-heat, which, if employed in excess, always exercises a detrimental effect upon Orchids, especially the cooler-growing species, by causing the plants to shrivel or lose their foliage, and tending to encourage the multiplication of insect pests. Therefore, the cultivator will require to keep a sharp look-out for red-spider on the foliage of the more tender species. Thrips will probably be found on the more robust kinds, especially on the undersides of the leaves and axils of *Cypripediums*. These are best dealt with by carefully sponging the foliage, and by fumigating the plants at regular intervals with the XL-All Vaporiser.

THE FLOWER GARDEN.

By T. H. SLADE, Gardener to Lord POLTMOORE, Poltmore Park, Exeter.

Pyrethrums.—If the stock of these needs to be increased, the work may be commenced. Lift the plants, and divide them into moderately small pieces, and put them into small pots, using a fairly rich soil. Place the plants in a frame, and keep close for a short time. Spray them lightly overhead on bright days; they will soon become established, and will flower late in the summer.

Campanulas.—Sow seed of *C. pyramidalis*, white and blue varieties, in pans containing light soil. Afford them a gentle heat. The variety "Syon House" or compacta is very useful for some positions, and the ordinary, tall-growing varieties are valuable for back-row plants. It is not altogether necessary to cultivate them in pots, as the plants will lift well from the borders just at the time the flower-spikes appear.

Aquilegias (Columbines).—If seeds of the new hybrids be sown now, and kept growing gently until the plants are large enough to plant out, they will flower late this season. It is a good plan to sow seeds annually, and to keep the plants about two

years. Few plants are more pleasing than are these when in flower on a border. Sow the seeds in boxes or pans filled with light soil.

Stocks and Asters.—Prick off the seedlings as soon as they show a true leaf. Select some open space in the frame-ground if space cannot be afforded them in a garden-frame; and get ready some stakes about 2 feet long, and some boards 1 foot wide. Drive in two stakes opposite to each other, according to the length of the boards, and just far enough apart to keep the boards in position when placed on edge between them. The temporary frame should be no wider than an ordinary garden mat will cover. Some stout laths or thin battens will make a good skeleton frame for placing over the top to support the mats at night. Place in the bottom of this frame 2 inches of spent Mushroom-bed manure, and over this a layer of about 2 inches in thickness of light soil; prick out the plants into this bed at a distance of 4 inches each way. The plants will root freely into the bottom layer, and may be lifted next month with good balls of adhering soil and manure. If the plants are raised in slight warmth only, and transferred to a cold frame previous to being pricked out, they will not suffer from exposure to the weather in such frames. Sprinkle the plants overhead on bright days sufficiently early to allow them to become dry before night.

Half-hardy Annuals.—Continue to prick out seedlings which were raised in heat. Similar temporary frames to those advised for Stocks will answer for many of them.

Petunias and similar tender plants required for bedding-out should be pricked out in small boxes and placed in a little heat for a time. Later they may be removed to cold frames.

Cephalopodas.—Pot on the young plants when necessary, and do not allow them to become pot-bound or the plumes will develop prematurely.

Propagating.—Complete without delay any arrears of this work. Any small cuttings that have rooted in pans should be transplanted thinly into boxes.

Annuals.—If the sowing of seeds was anywhere not completed in the open borders during March, take the first opportunity to get it done. Watch closely any that were sown last month; and if showery weather prevails, dust the young plants over with a mixture of soot and lime to keep away slugs.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bicton, East Budleigh, Devonshire.

Celery.—The plants of the earliest sowing are now fit, and may be pricked out in a disused hot-bed frame, or in a bed prepared on a south border. The soil should have a small quantity of spent Mushroom-bed manure which has been passed through a $\frac{1}{4}$ -inch mesh mixed with it. The bed being made smooth and level, the plants should be pricked out at 4 inches apart, afforded water, and kept close and shaded for two days afterwards. At the expiration of that time, air should be admitted until in mild weather the lights may be quite drawn off the frames by day. Remove seedlings from later sowings to a cold pit or frame when coming through the soil. Where Celeriac is grown, seeds should now be sown under a hand-light in a warm situation.

Beetroot.—In order to have Beetroot towards the end of summer, a sowing of the Egyptian or Turnip-rooted, which is considered the best flavoured variety, may be made at this date, on trenched ground which has not been dressed with fresh manure unless it lies buried 2 feet below the surface. The best results are obtained from ground that has not been recently manured. Here this crop usually follows Asparagus which has been lifted for forcing. Sow the seed in drills in patches of half a dozen, at 12 to 15 inches apart, 1½ in. deep. The main sowing should not be made before the first week in May.

Cardoons.—Seed may now be sown to the number of three in small pots, these being placed in a frame having a warmth of 50°, and when the strongest can be ascertained, the others may be pulled up. When the roots have filled the pots, afford a shift into small 48's, and let them grow on without check, hardening off and planting out in June into trenches, prepared as for Celery. Another method is to sow in patches, 15 inches or so apart, at the end of the present month in the trenches, and thin to one plant per patch.

Salsafy and Scorzera.—These two roots are afforded identical treatment, and the preparation of the seed-bed is the same as that for Beetroot. The seed drills should be drawn 15 inches apart, and shallow, say less than 1 inch. The plants may stand at 6 to 7 inches apart.

Ridge Cucumbers.—Like Vegetable Marrows, Cucumbers are the better for a little bottom-heat at the start, and where several hand-glasses or cloches are available for covering the plants for a few weeks after being put out, a sowing may be made in small pots in a temperature of 55° to 60°, and be placed under these protectors early next month.

FRUITS UNDER GLASS.

By MALCOLM MCINTYRE, Gardener to Sir CHAS. TENNANT, The Glen, Innerleithen, Peeblesshire.

Pines.—Those plants which were started early in the present year, and are now near the flowering period, should be lightly sprinkled at closing up time, omitting this when the flowers open. In modern houses, it will be desirable to afford a slight shading during the hotter hours till the foliage becomes hardened and inured to sunshine. When flowering is past, and the roots are ascertained to be in good condition, weak guano-water may be occasionally afforded. Let ventilation of the Pine-stoves take place early in the forenoon, commencing when the heat has reached 80°, and closing in the afternoon when it is at 85° from sun-heat, damping down then and later as often as may seem desirable, and let a steady bottom-heat of from 80° to 90° be maintained. The night temperature may range between 70° and 75°. Let all suckers be removed, excepting those required for increase. Suckers put in last month must be shifted before they get pot-bound; shift them into the fruiting-pots, taking care, however, to have the soil well moistened a day or two previously, so that it may be in a moderately moist state when they are potted. Pots of 11 inches in diameter are suitable for all varieties to fruit in. When removing the plants from the bed, whitewash the walls of the stove with hot lime-wash, and replenish the bark-bed if it is required, mixing the new with the old tan to a depth that will afford the necessary degree of warmth, i.e., 90°. Maintain a humid state of the air, and employ no more fire-heat than is necessary; keep a temperature of 70° to 75° on mild nights. Ventilate slightly in the morning when the glass indicates 80°, liberally at 90°, closing with sun-heat at 85°, at which time dew over the plants. Carefully examine the plants at the least once a week as to their requirements in regard to water. Fruits that are colouring will require scarcely any water at the root. Lady Beatrice Lambton, Prince Albert, and others, have a tendency to split and blacken at the core if much water be afforded at this stage.

Strawberries in Pots.—The weather has not been favourable for the flowering of Strawberries, the blossoms being liable to injury by cold draughts, especially in places where the plants are on a level with the ventilators. Strawberry-houses are not perfect unless the ventilators are beneath the pots, and in houses of this pattern here the plants are doing well. When the plants and ventilators are on a level, the greatest care is called for in giving air. In dull and wet weather, shake the flower-spikes occasionally; thin the flowers to about a dozen per plant, retaining the boldest-looking flowers, which are usually the first to expand. When the size of Peas, thin the fruits, leaving half-a-dozen on a plant. I find that if a dozen or more be left on a plant, about one-third are of a fairly good size, and the others small, the total weight being no more than when the fruits are thinned to half-a-dozen. The larger the fruit the more handsome they look on a dish. High colour should accompany size, and this is the reason that Royal Sovereign is so much esteemed by market-growers; and La Grosse Sucrée will bring more per lb. than President, although the latter is of better flavour. I find, as I said in a previous Calendar, to put flavour into forced Strawberries they should be removed from the forcing-house to a cool, airy shelf close to the roof glass a week before the fruits are ready for consumption. The best early forcing Strawberry here is Royal Sovereign. It is a good all-round one, and comes in before President. Out-of-doors, for late fruiting, nothing beats Sir Joseph Paxton and British Queen. Hard forcing does not suit these varieties. The great secret in forcing Strawberries is to keep them

properly supplied with water, examining them in bright weather twice or three times a day, and liquid-manure afforded three times a week when the fruit is swelling. There is nothing like slow and progressive growth for Strawberries up to and past the flowering point, but as soon as the fruit begins to develop, the temperature should be raised to 65° or 70° by night, and 75° to 80° by day, and air admitted on all favourable occasions.

THE HARDY FRUIT GARDEN.

By C. HERRIN.

Methods of Grafting.—In carrying out this operation, various methods may be employed to suit the nature of the particular stock to be operated upon; but those mentioned below will suffice for all purposes in the fruit garden. In every case the aim of the operator must be an endeavour to secure a perfect union by fitting together as closely as possible the largest portion of the bark of both scion and stock. Before fitting them together, they should both be quite free from grit or dirt.

Whip Grafting is one of the simplest and best methods for stocks of small size. With a sharp knife cut back the stock to the required length. To prepare the stock for the scion, insert the knife from 4 to 6 inches from the top, according to the length of the latter, and by drawing it in an upward direction take off a clean slice at almost half its thickness to the top. About a couple of inches from the base of this cut, form a tongue by pushing the knife in a downward direction. The scion must be shaped to fit the cut portion of the stock as nearly as possible, making sure that the two edges of the bark meet on one, if not both sides. A tongue should be made in the scion by cutting in an upward direction, to fit into that made in the stock. This is of considerable assistance in securing the scion in its proper position while being fixed. The scion should be furnished with two or more wood-buds, and after being fitted to the stock, be bound round with raffia or soft string, and clayed over or smeared with grafting-wax as quickly as possible.

Crown Grafting.—Where large healthy trees with stout branches are desired to be worked with better or other varieties, crown or wedge-grafting will be the best to adopt. The branches must be headed back, cutting them across transversely, making the surface of cut portion quite smooth with either knife or chisel. In crown-grafting, the bark of the stock should be slit open downwards, cutting just through the bark for about 3 inches in length. The scion requires a portion of the bark and wood smoothed off, in length corresponding to the slit in the stock, at the upper end making a transverse inward cut, thus forming a shoulder which, resting on the upper flat part of the stock, assists the fixing of the same in its place when inserted in the opening made by raising the bark in the side of the stock. Where the branches are large, two or three may be inserted around each. Secure the scions in a similar manner as the preceding.

Cleft or Wedge Grafting is carried out in a somewhat similar manner to the preceding, but a chisel is necessary to cleave the branches of the stock after they have been prepared as above. Then a small wooden wedge should be driven in to keep the stock open, the cleft edges being made quite smooth to receive the scion. The portion to be inserted should be cut into a wedge-shape, and when placed in position and the wooden wedge is withdrawn, the stock closes upon the scions, the bark of which should meet that of the stock. Bind round with raffia, and finish off with clay or grafting-wax.

Saddle Grafting.—A modification of the ordinary method is practised in some districts, especially in the West of England, and may be carried out later in the season with more safety than with other methods described. The stock is cut off in a sloping direction, the scion slit open about two-thirds of its length, so that one side is thicker than the other, the two surfaces being made quite smooth. The rind of the stock is then opened down one side, and the thick portion of the scion adjusted between the bark and wood; the thinner portion is then set astride the stock, and a small portion of the bark removed exactly the size of that part of the scion, that the two barks may fit exactly. It is then secured with raffia or soft string, and covered with clay.

Other methods are sometimes adopted to suit circumstances. A simple wedge or side-graft is occasionally useful for furnishing a vacant space through loss of a shoot, or failure of a bud to push where a shoot is desired. This method is also sometimes used for testing new or seedling varieties in quicker time than would be possible on own roots. If a stock be cut off at the top in a slanting direction, the graft should be put in at the bottom of the slope, the upper part being removed down to living tissue after the graft has begun to grow.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HUSSEY PACE, Esq., Prestwold Hall, Loughborough.

Cannas may now be removed into the pots in which they will flower. Select the most forward plants, and put them into 24's or 8-inch pots, using a compost of good turfy loam three parts, leaf-mould and spent Mushroom-manure one part each, and some river or washed sand. Pot firmly, and afford the plants a temperature of 60° at night, and 65° by day. Syringe them twice daily, and afford good supplies of water when the roots have become active. Plants which have bloomed in the stove during the winter months should be given further rest.

Zonal Pelargoniums which have been propagated to flower next winter, and are now in small pots, may be removed to 3-inch pots, using a compost of three parts loam, one part leaf-soil, and one part old Mushroom-bed manure and sand. Pot firmly, so that the plants will make strong short-jointed growth. Place the plants in a frame where a temperature of 50° may be afforded them, and keep their heads as close to the glass as possible. Afford a little shade during bright days until the plants have made fresh roots, and the leaves will bear full exposure to the sun's rays. "Cut back" plants may be shaken out of their pots, and repotted into others of the same size. When they again become pot-bound, and when in flower, afford the plants some liquid-manure.

Coleus.—Young plants are now advanced sufficiently to be put into 5-inch pots, from whence they may be transferred subsequently to 8-inch pots. The most suitable rooting medium is one composed of turfy-loam two parts, peat one part, leaf-soil one part, and a little sand or fine lime scraps. Afford the plants a temperature of 60° until established, keeping them near the glass. They may subsequently be removed into a warm frame, and fully exposed to the light, in order that they will develop the rich colours of the leaves.

Himalayan Rhododendrons.—These fragrant, handsome plants, after flowering should have stray branches cut back and be placed in a house having a temperature of about 60° by day, and 50° by night, and slightly syringed twice a day till growth for the season is complete and the flower-buds are prominent. If repotting be required by any specimen, it should be afforded as soon as flowering is over. Afford good drainage, clean and not over-large pots, and a compost of peat two-thirds, turfy loam one-third, with the finer particles sifted out of it, and sufficient sand added to give porosity. Perform the potting firmly, and do not afford water in excess at any time. Growth being complete, the plants should be gradually inured to the outer air, and be at length placed out of doors on a bed of coal-ashes in a sheltered position, and where they benefit from the mid-day sun. Varieties for affording a succession of flowers are R. Countess of Haddington, Lady Alice Fitzwilliam, Princess Alice, fragrantissimum, formosum, Sesterianum, and calophyllum. The foregoing Rhododendrons are not to be confused with Veitch's warm-house hybrids of R. javanicum, R. Taylori, and R. jasminiflorum, which are winter-flowering, and require a higher temperature than the former.

Tuberous Begonias, if sufficiently well-rooted in boxes, may be placed in the pots in which they are to flower, viz., 7 or 8-inch. The compost used should consist of loam two-thirds, leaf-soil one-third, with some spent hops, and coarse silver-sand mixed with the soil. Place the plants in a frame having a warmth of 55°, and syringe and shade them till established, affording water sparingly whilst growth is not very active. All the earlier flowers should be removed about four weeks before the plants are wanted in bloom. When the pots fill with roots, guano-water may be applied frequently.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to read.

Local News.—Correspondents will greatly assist the Editor by the early introduction of local events likely to be of interest to our readers, or of any matter which it is desirable to bring under the notice of horticulturalists.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Contributions should be written on one side only of the paper, sent as early as the week, as possible, and should be signed by the contributor. If desired, the signature can be left unprinted, but kept as a guarantee of good faith.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, APRIL 16 { Brighton and Sussex Horticultural Society's Show (2 days).

THURSDAY, APRIL 18 { Linnean Society Meeting.
Royal Botanic Society Meeting.
Manchester Royal Botanical and Horticultural Society's Show in St. James' Hall (3 days).

SALES.

MONDAY, APRIL 15.—Standard and other Roses, Ferns, Perennials, Begonias, Azaleas, &c., at Protheroe & Morris' Rooms.

TUESDAY AND WEDNESDAY, APRIL 16 AND 17.—Clearance sale of Greenhouse Plants, Orchids, &c., at Waddon House, Waddon, Surrey, by order of Exors. of P. Crowley, Esq., by Protheroe & Morris.

WEDNESDAY, APRIL 17.—Consignment of Lilliums, Iris, &c., from Japan; Tuberoses, Davallias, Palms, Gladioli, &c., at Protheroe & Morris' Rooms.

FRIDAY, APRIL 19.—Duplicate Plants, Stoke Hill Collection; Cattleya labiata, Established and Imported Orchids, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick.—48° 4'.

ACTUAL TEMPERATURES:—

LONDON.—April 10 (6 P.M.): Max. 52°; Min. 40°.

April 11 (11 A.M.):—Rainy, warmer.

PROVINCES.—April 10 (6 P.M.): Max. 51°, S.W. Ireland; Min., 38°, N.E. Scotland.

The Royal Horticultural Society.

"NOTICE is hereby given, that a general meeting of the Fellows of the Society will be held at the Drill Hall of the London Scottish

Volunteers, Buckingham Gate, Westminster, on Tuesday, April 23, at 3 P.M., to consider, and if approved, to adopt the proposal of the Council to purchase, on behalf of the Society for the purpose of its new gardens, forty-eight acres of land in the county of Kent, forming part of Rabbit's Farm, and adjoining the Little Boy's Home at South Darenth.

Fellows wishing to see the property before the meeting should take the 10 A.M. train from Victoria (L. C. & D. Railway) to Farningham Road Station on Thursday, the 18th, when some members of Council will be on the spot to explain the boundaries, &c. By order of the Council, W. WILKS, Secretary."

We are requested to give prominent publicity to the above notice, and in view of the extreme importance of the matter as regards the future of the Royal Horticultural Society, we invite expressions of opinion from our correspondents, which must reach us in time for our next week's number, in order that Fellows may have an opportunity of considering the matter before the 23rd inst.

We are in ignorance of what means the Society, even in its present prosperous condition, has to carry out such a scheme, but we cannot suppose they would embark in such an extremely risky procedure with the small amount of capital in their possession. The necessary information will, no doubt, be forthcoming at the meeting on the 23rd; but, seeing the overwhelming importance of the subject, it seems desirable that the meeting should not be

asked there and then to adopt any proposal, but should hear what is to be said in favour of the scheme, and what against, and then "take time to consider," adjourning the meeting for that purpose.

For our own part we thoroughly approve the formation of a new experimental garden, and an adequately equipped school of horticulture attached to it, but only under certain conditions. Those conditions do not exist. We must look at the subject purely from a business point of view, and not be led away by the fascinations of a specious proposal. We cannot, therefore, in the absence of specific information to the contrary, but look aghast at the proposal as likely to be utterly ruinous to the Society.

The lease at Chiswick does not lapse for nearly twenty years, and there is therefore no immediate hurry to procure another garden. It seems to us better to go on for a time with Chiswick, with all its admitted imperfections, than to run the risk of plunging the Society for the third time into financial embarrassments of the gravest character.

The feeling of a large number of the Fellows, we are assured, is, that however desirable a new garden may be, the acquisition of a proper meeting place is more immediately desirable, and that the energies of the Council would be better directed towards the fulfilment of this aim.

HYDRANGEA HORTENSIA (see Supplementary Illustration).—Few plants introduced to this country from China are so much admired, or so generally cultivated, as the subject of our illustration. The flowers, chiefly infertile ones, vary in colour according to the soil in which they are grown, some being almost white, others of different shades of pink to pinkish-blue; and the season of flowering extends from April to September. It is eminently a plant for a pot or a tub, as our illustration shows, and is useful as an indoor plant in late winter and early spring, and as an out-of-door subject later in the year. As many of our readers are aware, Hydrangea hortensia is grown as a flowering shrub in the south and south-western parts of this country and Ireland, seldom suffering to any great extent from frost. We have to thank Mr. BUTLER, gardener to the Earl of ANCASTER, for the opportunity to figure so good an example as that depicted.

BACKWARD DAFFODILS.—Owing to the late season, it has been decided that the Narcissus Committee of the Royal Horticultural Society shall sit on May 7. In the Society's Arrangements the last meeting of this Committee for the present season is given as April 23.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—We are informed that Her Majesty Queen ALEXANDRA has been graciously pleased to be patron of this Institution, of which her late Majesty Queen VICTORIA was patroness for fifty years.

MESSRS. BARR & SONS' DAFFODIL COMPETITION.—The Rev. W. WILKS, M.A., asks us to state that the Cup offered by Messrs. BARR for a display of Daffodils not having been awarded at the meeting of the Royal Horticultural Society on Tuesday last, owing to there having been one competitor only, the Cup will again be offered for competition on April 23. The conditions were published in our issue for March 23, p. 188. The blooms that will be shown must be grown without artificial heat.

"BOTANICAL MAGAZINE."—The plants figured in the April number are:—

Cladrastis tinctoria, t. 7707.—A Leguminous tree with pinnate leaves, and long, many-flowered racemes of white, Pea-shaped flowers. A very old

inhabitant of our gardens, where it is best known as *Virgilia lutea*. It is a native of the Alleghany mountains.

Amorphophallus leonensis, Lemaire, t. 7708.—This striking Aroid is synonymous with *Corynophallus Afzelii*, figured in the *Gardeners' Chronicle*, 1872, p. 1619.

Kalanchoe farinacea, Balfour f., t. 7709.—A native of Socotra, where it was discovered by Prof. Balfour. The leaves are fleshy, spatulate 1 to 2½ in. long; and the numerous reddish flowers are borne in erect terminal panicles.

Rosa Fedtschenkoana, Regel, t. 7710.—A native of Turkestan, with blackish bark, red in the young state, and numerous slightly-curved prickles; the glaucous leaves are pinnate; peduncles nearly as long as the leaves, and, like the outer part of the calyx, studded with glandular hairs; bud elongate, sepals entire spreading, flowers white; "malodorous."

Stapelia nobilis, N. E. Brown, t. 7711.—A species with decumbent, quadrangular stems; flowers 6 to 7 inches across, with a bowl-shaped tube, 1½ in. long, expanding into five reflexed, lanceolate, acuminate segments, of a pinkish-cream colour, traversed by red-purple bars. It is a native of S. Africa.

HYBRID PASSION FLOWER.—We are indebted to Sir CHARLES STRICKLAND, of Hildenley, Malton, for the opportunity of examining a specimen of a hybrid raised by him out of *P. racemosa*, the princeps of gardens, crossed with *P. quadrangularis*. Curious and important as are the details of the structure, we need not weary the reader by recounting them at length. It may suffice for our present purpose to allude to the general characteristics. The foliage, stipules, flower-stalk, and bracts are those of *P. quadrangularis*. The flowers measure about 4 inches (10 cent.) across, and have a broad, cylindrical, smooth tube 15 mill. long intruded at the base, greenish, speckled with small pink dots. The sepals are 1½ in. (3 to 4 cent.) long, greenish externally, slightly keeled, crimson within, the petals half the length of the sepals, and reddish-purple on both surfaces. The outermost corona consists of numerous rows of slender white threads tipped with purple, about the length of the petals; the median corona is a white membranous tube, giving off on the free border numerous white threads, half the length of those of the outer series. Without going into further minutiae, it may be said that while the foliage resembles most closely that of *P. quadrangularis*, the flower is curiously intermediate between the two species. It is a handsome variety, and may probably be propagated by cuttings. A Passion-flower, said to have been raised between the same two species, was figured by us on Dec. 22, 1888, under the name "Woodhatch hybrid," it having been raised in the garden of the late T. B. HAYWOOD, Esq., at Woodhatch, Reigate. Unfortunately, we do not know in this case which was the pollen-parent and which the female, but the foliage in the Woodhatch hybrid is more like that of *P. racemosa*, and there are reasons for thinking that the cross was really between *P. racemosa* and *P. Raddeana*, the *P. kermesina* of gardens. M. T. M.

THE MIDLAND CARNATION AND PICOTEE SOCIETY will hold its next annual exhibition on July 31 and August 1, 1901, in the Botanical Gardens, Edgbaston, Birmingham. The tenth annual report now before us shows that this midland society has attained to a high degree of prosperity, and excellent exhibitions have been held each year. The report includes a schedule of prizes to be offered at the next exhibition. A list of some of the leading varieties of Carnations and Picotees, suitable for exhibition, a short article on Carnation culture, and other information useful to exhibitors of these flowers. Mr. R. CHATWIN CARTWRIGHT, Middleton Dene, King's Norton, Worcestershire, has succeeded Mr. ROBERT SYDENHAM as Treasurer, and communications may be addressed to the former gentleman, or to Mr. HERBERT SMITH, 22, Tenby Street North, Birmingham.

THE MIDLAND DAFFODIL SOCIETY.—The committee desire that we should inform our readers that the date of the exhibition at the Edgbaston Botanical Gardens, Thursday and Friday, April 25 and 26, as originally arranged, is hereby confirmed. The Royal Horticultural Society is sending a deputation from London for this occasion, and the committee expect the largest and most representative exhibition ever held. Miss WILLMOTT, the Rev. S. E. BOURNE, the Rev. G. H. ENGLEHEART, and F. W. BURBIDGE, Esq., M.A., have kindly consented to act as judges. Notice of entry for competitive exhibits must be received at Tenby Street, Birmingham, not later than Tuesday, 23rd; but where entries can be made the previous week, it will materially help the Secretaries' work. The committee hope to hold a conference some time during the meeting, of which particulars will be sent later. Any further particulars can be obtained on application to the secretaries. The Right Rev. the Lord Bishop of WORCESTER is President, Mr. ROBERT SYDENHAM Treasurer, and Messrs. JOSEPH JACOB and HERBERT SMITH Secretaries.

— **THE NATIONAL AURICULA SOCIETY** (Midland Section) will hold their annual exhibition in connection with the above on the first day only.

GASEOUS DIFFUSION.—Dr. HORACE BROWN, F.R.S., in the course of a lecture at the Royal Institution, said that:—

"The question how the minute quantities of carbonic acid in the air found their way into the leaves in sufficient quantity to nourish the plant, had long been a matter of controversy; but it was now established that they entered wholly by way of the minute openings known as stomates. But this fact presented a further difficulty, since the aggregate area of these stomates, when expanded to their fullest, was less than 1 per cent. of the total leaf-surface, and the amount of carbonic acid taken in by the leaf was such that it must enter by these openings more than fifty times faster than it would if each of them were filled with a constantly renewed solution of strong caustic alkali. There appeared to be only one way out of the difficulty, and that was the assumption that the leaf knew more about the laws of free diffusion than we did. This was proved to be the case. If diffusion of gas were established down a cylinder of equal diameter from one end to the other, the rate, other things being the same, varied directly as the area of the cross-section of the cylinder. But if the cylinder were obstructed somewhere in the line of flow by a thin diaphragm pierced with a single circular hole, the acceleration of flow was inversely proportional to the diameters of the apertures—as the aperture was made smaller, the flow through a given unit of area was proportionately increased. Since the stomates corresponded to the latter case, it became easy to understand how, in spite of the small area of leaf they occupied, they could drink in the atmospheric carbonic acid with such rapidity; the leaf constituted a multiperforate septum, and the distance at which the stomates were arranged on the underside of most leaves was that which by experiment had been found the most economical arrangement of very small apertures in such a septum." *Times*.

SEED PRICES A CENTURY AGO.—Mr. GRIEVE, of the Red Braes Nursery, Edinburgh, has kindly submitted to us an order for seeds in 1789, showing that sweet-scented Peas were cheap in those days.

"MEM. FOR ALEXR. MUIR.

Get the following Garden Seeds from Messrs. Anderson & Leslie, seed merchants, a little below the Exchange:—

1 pd. Hasting Pease	...	4d.
1 pd. Marrowfat Pease	...	4d.
1 pd. Turkey Beans	...	4d.
2 oz. prickly Spinage	...	4d.
1 oz. Early Carrot	...	2d.
1 oz. Red Carrot	...	1d.
1 oz. Early Turnep	...	2d.
1 oz. Broad Turnep	...	2d.
3 oz. Strasburg Onion	...	9d.
1 oz. Leek, Scots kind	...	6d.
1 pennyworth of Radish	...	1d.
1 pennyworth of Lettuce	...	1d.
Also the following annual flowers, viz.:		
2 pence worth of yellow Lupine	...	2d.
1 pennyworth of Sweet Scented Pea	...	1d.
1 pennyworth of Minionet	...	2d.
1 pennyworth of China Aster	...	1d.
1 pennyworth of Lark Spur	...	1d.

Send also half a dozen of other kinds of Annual flowers at one penny each kind, as Mr. Leslie thinks proper

Edinburgh, 6 April, 1789.

Received payment,

Stobo, 1st April, 1789. ANDERSON, LESLIE & Co.

To be taken to Mr. Archibald, Cannel Makers Row; to be taken there to-night, if the man does not call."

EMIGRATION.—We take the following extracts from the circular issued by the Emigrants' Information Office, 31, Broadway, Westminster, S.W.:—This is the best season of the year for emigration to Canada. There is a good demand for competent farm labourers in nearly all parts, except British Columbia, and for female servants everywhere, both on farms and in towns. In New South Wales, at Lithgow, there is a demand for female servants. At Sydney, men out of work are being provided with employment on Government works at 7s. a day; it is stated that this wage is attracting men from the country districts, so that in several districts it has been impossible to obtain good farm hands. In Victoria, there is practically no demand for more mechanics or labourers, unless they are specially skilled, and bring a little money with them. Many unemployed have been provided with work during the last few weeks on railway construction. Owing to drought and scarcity of employment in Queensland, emigrants, other than female servants, are not recommended to go there at present, unless they receive nominated passages, or take a little money with them. Assisted passages have recently been stopped. Work at the mines and on farms and stations has been seriously injured by want of water. The report of the Government Labour Bureau in Western Australia for 1900, states that, generally speaking, there has been full employment for all classes of workmen throughout the year. Unskilled labour was better employed than in the year before, and first-class labourers found no difficulty in obtaining regular employment at good wages. The demand for farm workers was considerably beyond the supply. Domestic servants were in constant demand throughout the year; the fifty immigrant girls who arrived from England last July were all engaged in one day. It is difficult for clerks, accountants, book-keepers, and that class of labour to find employment anywhere. The last reports show that there was plenty of work in New Zealand. In Taranaki there is a great demand for competent general labourers for road-work, &c., and the saw-mills and building trades are very busy. In country districts the harvest has been giving plenty of employment to farm labourers, for whom there is a good demand. Persons are again warned against going to South Africa at present in search of professional or manual work, unless they have ample private means to meet the very high cost of living. They will not, as a rule, be allowed to proceed up country. There are already large numbers of persons in South Africa at the present time who are out of employment. Candidates for the new South African Constabulary should apply to the Recruiting Officer, 1, Chapel Place, Delahay Street, Westminster, S.W.; they must be good riders, good shots, single, strictly sober, and from 20 to 35 years of age; they will be given free passages to South Africa.

HELLEBORUS ARGUTIFOLIUS.—From the Trinity College Botanic Garden, Dublin, we receive, through the kindness of Mr. BURBIDGE, a fine specimen of this noble perennial. It deserves this appellation, though its flowers are green, for it is of imposing appearance. Its stout stems have long-stalked, thick, leathery, glabrous leaves, the blades of which are divided to the very base into three oblong, acuminate, spine-toothed, net-veined segments; each segment measures about 5 inches in length by 2½ in breadth, and the two lateral ones are markedly oblique at the base. The veins are depressed on the upper surface. This is a very dry description, but if we confined ourselves to such terms as magnificent, grand, noble, stately, fine, superb, sublime, what better impression should we give? The inflorescence is a terminal, much-branched, many-flowered cyme, bearing numerous leafy bracts, the lower and larger ones oblong, entire, 4 ins. long by 1 inch in breadth, with rudiments of three lobes at the tips. These bracts gradually diminish in size upwards till those at the base of the flower do not measure more than 1 inch in length. The bracts are of a lighter green

colour than the true foliage leaves, and their veins, in place of being netted, are straight. It is clear, then, that they are of the nature of leaf-stalks, or sheaths, rather than of leaves, and it is very interesting to see the gradual transition between these dilated leaf-sheaths and the sepals, which evidently have the same origin. The flowers are globose, and measure, if artificially expanded, about 2 ins. across. The sepals are five in number, of a green colour, overlapping at their edges. Within them is a row of small green tubes, each raised on a short stalk, and about half the length of the sepals. These tubes occupy the position of petals, but are so modified as to become nectaries. Within them is a great crowd of stamens around the base of five green ovaries, which will eventually ripen into as many follicles. The anthers open outwardly, and are in advance of the styles in their development. It is pretty clear, then, that insect agency is necessary to secure the due fertilisation of the flower, and the inducement held out to the insects is the honey-like liquid secreted in the nectaries. It is these nectaries that constitute the essential features of the genus *Helleborus*, so that when a draughtsman makes an artistic drawing of the flower, and leaves out these tubes, as we have known to be the case, his drawing may be artistic from one point of view, but it is useless and misleading from another. It is commonly considered that these tubes are modified petals, but it seems more likely that they are modified stamens, for reasons into which we need not enter here. The species has been, and is, confused in books with *H. lividus*, which is quite a different plant. Even the Abbé COSTE, in the first part of his *Flore de la France*, published in 1900, refers this plant to *H. lividus*. A mistake is also frequently made by calling the plant *angustifolius*; the proper name is *argutifolius*, as anyone may see who looks at the very sharp toothing of the leaves. *H. argutifolius* is a native of Corsica, Sardinia, and perhaps of the Balearic islands.

WHAT'S IN A NAME?—

"What's in a name? that which we call a Rose
By any other name would smell as sweet."

Possibly, but what if that Rose bore the name of *Fedtschenkoana*, and had among its characteristics "malodorous flowers," and in which in plain English the "scent of the flowers is unpleasant." We do not think SHAKESPEARE could have known of this Rose!

HARPER-ADAMS COLLEGE.—We have received a provisional prospectus of a college just founded at Newport, Salop, in accordance with the will of the late Mr. HARPER-ADAMS, for the purpose of teaching practical and theoretical agriculture. The farm consists of about 180 acres, and the College buildings contain lecture-rooms, laboratories, workshops, and every essential requisite for the tuition and education of the students. Instruction in the department of biology is entrusted to Mr. C. W. HERBERT GREAVES, the lecturer on horticulture to the Salop County Council, and who will also include horticultural teaching among his duties at the newly-established College. The Principal is Mr. P. HEDWORTH FOULKES.

AN EXHIBITION OF SWEET PEAS.—The National Society just inaugurated has decided to hold an exhibition at the Royal Aquarium, Westminster, on July 25 and 26. Mr. H. J. WRIGHT is General Secretary, and Mr. R. DEAN is Exhibition Secretary.

VINE GROWER AT ROYAL EXOTIC NURSERIES, CHELSEA.—In connection with the retirement of Mr. WILKINS, mentioned in our last issue, we learn that his position at Messrs. JAS. VEITCH & SONS has been filled by the appointment of Mr. WILLIAMS, who for the last fourteen years has been Vine-cultivator for Messrs. H. LANE & SON, Berkhamsted. Messrs. VEITCH are building a considerable amount of glass at Feltham, which will take the place of some of the houses at Chelsea which are to be given up.

STOCK-TAKING: MARCH.—The Board of Trade returns for the past month show an increase of £1,423,922 in the imports, and a decrease of £295,528 in the exports. The "ups and downs" in the items making up the former are somewhat remarkable in character. Of nine sections into which "imports" are divided, only three show on the totals an increase, i.e., food duty free, £3,039,575; chemicals, &c., £98,759; and parcel-post, £100,819. The following figures are from the "summary" table:—

IMPORTS.	1900.	1901.	Difference.
	£	£	£
Total value ...	45,002,134	46,426,056	+1,423,922
(A.) Articles of food and drink—duty free... ..	13,454,168	16,493,743	+3,039,575
(B.) Articles of food & drink—dutiable	2,583,965	2,406,666	-127,299
Raw materials for textile manufac- tures	7,977,352	7,830,888	-146,469
Raw materials for sundry industries and manufactures	4,632,465	3,948,609	-683,856
(A.) Miscellaneous articles	1,695,076	1,669,042	-26,034
(B.) Parcel Post ...	106,985	207,754	+100,819

The following is our usual table extracted from the supplies of fruit, roots, and vegetables:—

IMPORTS.	1900.	1901.	Difference.
	Cwt.	Cwt.	Cwt.
Fruits, raw:—			
Apples	97,642	155,840	+58,198
Apricots and Peaches	18	146	+128
Bananas... bunches	90,728	126,849	+36,121
Grapes	1,507	1,514	+7
Lemons	81,503	71,284	-10,219
Nuts—Almonds ...	7,789	4,569	-3,220
Others, used as fruit	45,120	41,629	-3,491
Oranges	739,136	747,923	+8,787
Pears	895	2,015	+1,120
Plums	145	127	-18
Strawberries ... ..	.....	5	+5
Unenumerated, raw ...	2,319	3,980	+1,661
Dried fruit:—			
Currants, home con- sumption	161,575	32,164	-31,426
Raisins, do.	24,172	16,498	-7,674
Vegetables, raw:—			
Onions bush.	399,607	529,961	+130,354
Potatoes cwt.	596,440	741,903	+145,463
Tomatoes	46,888	49,576	+2,688
Vegetables, raw, unen- umerated value	£68,967	£41,819	-£27,648

The returns give us no indication of the value or quantity of fruit-pulp imported, but we learn that one jam manufacturer here ordered from a Californian syndicate 28 tons of Apricot pulp—in part vindication of the assertion that we are the greatest jam eaters in the world. Some of the figures included in the above are very noteworthy, and the little item as to Strawberries reminds us that the "handlers" of that fruit in Plant City, Florida, turned out last season some 400,000 quarts of that delicious fruit. The imports for the past three months foot up at £132,121,432, as against £127,198,536 last year, showing an increase of £4,922,896. Coming finally to—

EXPORTS,

we note that as there were five Sundays in March, as compared with four last March, the recorded figures suffer to that extent. The total for the past month is £25,021,293, against £25,316,821—a decrease of £295,528. The exports for the three months just ended amount to £70,812,279, as against £72,120,352—a decrease of £1,308,073.

FLORISTS WHO PHOTOGRAPH will be interested in an article by Mr. J. H. WALLSGROVE appearing in the *Photogram* for April, in which is described an ingenious modification of the well-

WALLSGROVE obtains the result will commend itself to all who use a camera for making pictures in their gardens.

"CLIMAT."—Under this name Mr. NICOLAUS DEMTSCHINSKY is publishing a journal devoted to the subject of climate. It is written in Russian, French, English, and German, and is, moreover, illustrated with charts. The British and American agents are Messrs. HUGH REES, Ltd., 124, Pall Mall, London, S.W.

THE HYACINTH GERM.—Mr. ERWIN SMITH, of the U. S. Department of Agriculture, has repeated Dr. WAKKER's experiments on the Hyacinth germ (a bacterium named *Pseudo-monas hyacinthi*). The general result of the numerous cultures and inoculations has been to confirm the substantial accuracy of Dr. WAKKER's researches. A yellow stripe down the centre of the leaf is a common symptom, which can, of course, be readily recognised. Equally apparent is the eventual soft rot of the bulb.

HOOKE'S "ICONES PLANTARUM."—The last-issued part (vol. vii., part 4, February, 1901) contains numerous illustrations of plants of botanical interest. *Habenaria repens*, t. 2686, is remarkable for inhabiting marshes and ditches, which is not quite what one expects in a terrestrial (?) Orchid. It produces a long, cylindric rhizome, but no tubers.

DISEASE IN PLANTS.—Prof. MARSHALL WARD has just published a small work on this subject, which it will be our pleasant duty to speak of at greater length at the earliest opportunity. In the meantime, we advise all interested in the subject to lose no time in applying to Messrs. MACMILLAN & Co. for a copy.

LÆLIA JONGHEANA.—The variety of this *Lælia*, named after Mr. KROMER, of Croydon, and shown by him at a meeting of the Royal Horticultural Society on the 26th ult., was awarded a First-class Certificate, not an Award of Merit, as reported in our columns.

CEROPEGIA DEBILIS.

THIS is a quaint little plant (fig. 89), flowering in one of our cool-houses. It belongs to the succulent section of *Ceropegia*, and, so far as I can ascertain, has not been figured. For the specific name I am indebted to Mr. James O'Brien, who kindly gave me the plant some few years since, and who has sent me the following particulars:—

"*Ceropegia debilis* was sent over by John Buchanan, who was attached to the mission in Eastern Tropical Africa for some years; later, he and his two brothers, all Scotchmen, opened a plantation in the Zomba district (upper Zambesi). He tackled Serpa Pinta, who wanted to pull down his British flag, and for that and for other services rendered to the Government he received the distinction of Companion of the Order of St. Michael and St. George in 1890. Nothing ailed them until our too well-known influenza got out there; it killed one brother, and sadly impaired the health of the other two, and John, thinking to shake it off by a sea voyage, started to come home, but died on the way, March 9, 1896. He was with me for a time a year or so before. In this little flower I see a reminder of very numerous pleasant and good acts which my dear friend never lost an opportunity of doing."

In habit and growth *C. debilis* is unlike the better-known species; the stems and leaves are succulent, and the habit is somewhat pendulous, the plant having all the appearance of growing in the niches of rocks and hanging down slender festoons of its graceful growth. As will be seen from the illustration by Mr. Theo. Carreras, the flower is somewhat elongated and slightly ventricose, with the segments of the corolla cohering at the apex, and fringed with fine hairs. *John W. Odell, Stanmore, Middlesex.* [*C. debilis* was described in our columns by Mr. N. E. Brown, on September 28, 1895, p. 358. Ed.]

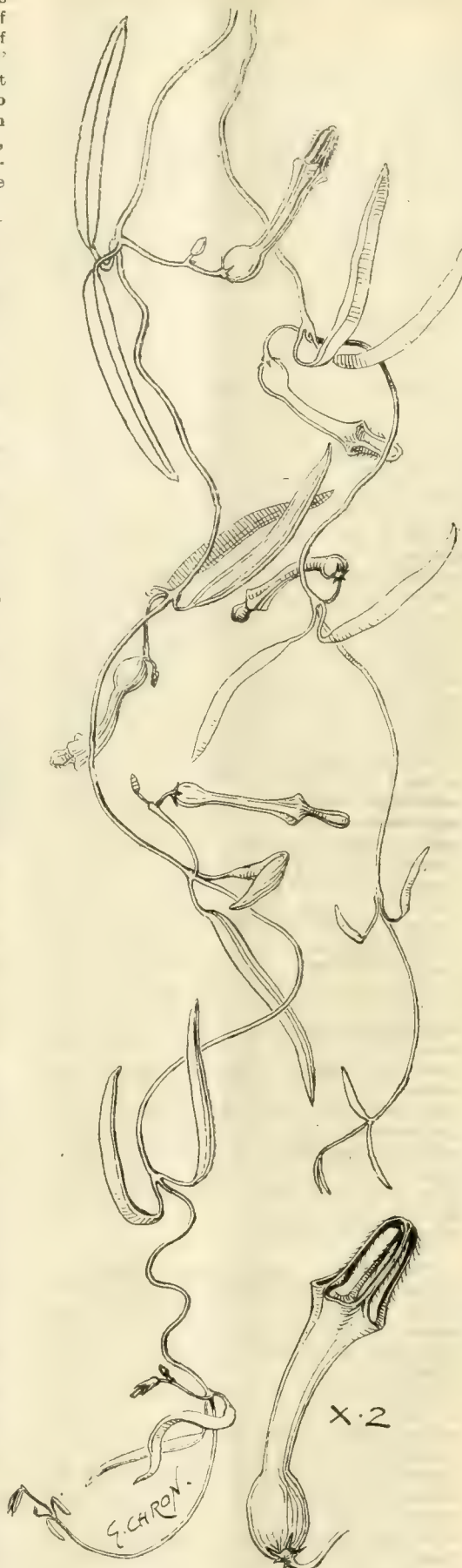


FIG. 89.—CEROPEGIA DEBILIS.

known platinum process whereby the striking effect of a rich brown background is given. A proper background, as flower photographers know, is one of the essentials to success in securing an artistic print, and the extremely simple way in which Mr.

BOOK NOTICE.

A NEW BOTANICAL TEXT-BOOK.*

THE names of MM. Gaston Bonnier and Leclerc du Sablon will guarantee the excellence of a forthcoming work, of which we have received the first "fascicle." It will consist of two volumes (8vo) of 2,500 pp., and 3,000 figures, the greater part of these being from Nature, and almost all new. The first "fascicle" contains 384 pp. and 553 figures, and the sixth and last will appear in 1903.

The authors intend to pursue a somewhat novel plan of treatment. Thus, in dealing with the natural orders, besides giving the usual external morphological characters, there will be added the more internal anatomical details. This will be important, for the French have done much in

botanists, such as M. Costantin, Bonnier, and others, that one looks especially for studies in this question; and we have had occasion to notice some work done in this direction by Professor G. Henslow.

The history of botanical discoveries has been an object of special research on the part of the authors. The reader, they say, will find descriptions of facts or "concrete" matters before the generalities are stated which can be deduced from them, so that he can see clearly what is demonstrated, and what still remains hypothetical.

The table of matter of the whole "Cours de Botanique" is published, and constitutes twelve parts. It is too long to reproduce in detail here, but a brief summary may be given. Part I. treats of generalities; II., of Morphology of Organs, external and internal; III., Flowering

The work is pleasantly written, and the abundance of excellent figures, with photographs of scenery exhibiting certain trees, &c., renders the work extremely clear and interesting. The first fascicle carries one to the seventeenth chapter, and holds forth a promise of a great interest to all who are interested in the progress of botanical science.

HOME CORRESPONDENCE.

APRICOTS FROM SEED.—I observe your correspondent, Mr. G. B. Mallett, in his suggestive and thoughtful article on raising fruit-trees from seed, recommends the sowing of Apricot-kernels as a means of increasing the number of varieties, and overcoming the liability of this fruit-tree to contract various diseases. And he, moreover, recommends the Apricot to be grown on its own roots in preference to working it on the Plum-stock. Will he kindly inform the readers of the *Gardeners' Chronicle* what is his experience in regard to planting Apricots on their own roots? If the trees are as fruitful as worked trees, as long lived, and of as moderate growth in this country; and how old a tree must be before it begins to fruit? Unless these questions can be answered in a satisfactory manner, where, I would ask, is there any advantage in own roots over budded Apricots? I fear that the tree would behave similarly to Peaches and Nectarines on the Almond, sending strong roots into the lower stratum of soil, with the inevitable result of gross, ill-ripened shoots, very apt to suffer from frost, and therefore from gumming and poor crops of fruit. In hotter climates than ours, roots which descend deeply are the better enabled to withstand the summer heat and drought; but here the summer heat is seldom greater than is necessary to ripen the fruit and the wood, and droughts are rare. Our surface-rooting Plum stocks fulfil the requirements of our climate to a better extent than own-rooted Apricots and Peaches. The greatest desideratum would be the raising of varieties that would ripen their fruits under orchard treatment, which at present is only possible in the hottest parts of these islands, and this should be the aim of cross-breeders. *M.*

SHOW AURICULAS.—The recent death of Miss Woodhead, of Halifax, a member of the family to whom we owe as raisers George Rudd, grey edge, Mrs. Dodwell, white edge, Black Bess, self, and others, occasions the dispersion of the collection of show Auriculas in the possession of this lady at the time of her death. The whole collection, which includes good batches of several of the leading varieties, has passed into the hands of Mr. Charles Turner, Royal Nursery, Slough, and will materially strengthen the collection grown there. Show Auriculas appear to be in brisk demand; and the membership of the National Auricula Society appears also to increase. Hogg was thoroughly justified in applying to the show Auricula the terms, "a beautiful and fascinating flower," and it will always have a strong fascination for its admirers, because of its striking individuality of character. *R. D.*

MELONS.—Without the aid of fireheat the cultivation of Melons gives much trouble; but given a hot summer with plenty of sunshine, I have seen good crops grown and ripened in simple hotbeds in brick-pits and frames. There must be, however, a bottom-heat of 80°, obtained from tree-leaves and stable-litter. Under this method, plants should be ready to plant out about the middle of June. Sow seed at about the present date, and place in a frame where the warmth at night ranges from 60° to 65°; and when the plants are up 4 inches, put a stake to each, and repot before the plants get pot-bound. A hot-bed which has done service in forcing Asparagus, if turned over and well mixed, and the linings freshened up with new material, will answer the purpose. Place a wheelbarrow-load of rather heavy loam with a 6-inch pot of bone-meal added under each light of the frame or pit, bringing to within 9 inches of the glass, and making it quite firm. Set out two Melon plants on each hill, burying the balls no deeper than they were in the pot; nip out the point of the stem a few days before planting, and take two shoots from each. Fertilise the flowers about mid-day, stop the laterals at the next joint beyond the fruit, and close with sun-heat about 2.30 p.m. with a light dewing overhead, unless at the time of



FIG. 90.—CLIVIA MINIATA, MEASURING SIX FEET ACROSS, AND CARRYING, ORIGINALLY, THIRTY-TWO FLOWER-HEADS. GROWN AT "ABERTAY," BROUGHTY FERRY, N.B.

tracing affinities through microscopic anatomy. There will also be the newest applications of the plants of the various orders to agriculture, the arts, and medicine.

In the study of experimental physiology, the authors will describe and explain only what are positive facts, or what seem to them to be definitely acquired to science.

Considerable stress will be laid upon the distribution of plants and geographical botany, as well as on Palæontology.

"Experimental morphology" is a novel introduction of great importance. This will treat of the action of the environment or surrounding conditions on plants, thereby effecting changes in their structure. It is to French

Plants; IV., Gymnosperms; V., Vascular Cryptogams; VI., Muscineæ; VII., Thallophytes; VIII., Physiology, under the six headings of Alimentation, Reserve Matters and secretions, Respiration, Fermentation, Assimilation, and Transpiration.

Part IX. is devoted to experimental morphology, to which allusion has been made, and deals with the influences of gravity, pressure, and other mechanical forces; of radiation, and of the external medium on the movements of plants.

Then follow sections on the action of water, light, temperature, subterranean conditions, and climate in general; as well as on the influence of other plants and of animals, of parasitism and symbiosis; finishing with a historical résumé on experimental morphology.

Part X. deals with Botanical Geography, Part XI. with Palæontology, and Part XII. and last, upon Variation and Evolution of Plants. At the end of each part there is a résumé of the contents of the several chapters contained in it.

* Cours de Botanique-Anatomie, Physiologie, Classification, Applications agricoles, Industrielles, Médicales, Morphologie Expérimentale, Géographie Botanique, Paléontologie, Historique, par MM. Gaston Bonnier et Leclerc du Sablon. (Paris: Paul Dupont, Editeur; 25 f.; 4, Rue du Bouloi, 1901.)

setting. Mats should be laid on the glass at night, and ventilation be done with care. The after treatment is, in all respects, that afforded Melons generally in the summer. *J. Mayne.*

SPARROWS AND POLYANTHUSES.—That impudent feathered depredator, the house sparrow, since he has become the pet and protégé of County councils, seems to regard the Polyanthus and Primrose [And Carnations. Ed.] as grown in gardens as special delicacies, and utilises the flower and leaf-buds as such with a vengeance. The pert little rascal, now presuming upon his freedom from restraint, thanks to modern sentiment, repays his friends for their kindness by preying upon the buds of these popular spring flowers, almost ere they are seen by their growers. The destruction, by some regarded as purely wanton, is doubtless caused by hunger, which the tiny tender buds seem to appease. In the gardens attached to houses where these birds harbour, they have practically rendered the culture of the Polyanthus and Primrose impossible. But it is the former plants which suffer most. Netting the plants over in the early spring is difficult when they are in diverse places, and perhaps planted singly. Something may be done to temporarily alarm these very acute creatures by fixing black thread just about the plants, but in time they get to regard even that as a harmless bogey. In extensive gardens like those at Hampton Court, where many thousands of Polyanthus are bedded out in the winter, thread is used apparently with good effect, but there the sparrows are less plentiful relatively than they are in and about villa gardens. A few years since I put out 600 strong plants in the grounds of the County Hall, Kingston, but was greatly disappointed to find that hardly a flower-bud was left in the spring to open. Really the mischief was done before it was noticed. We may not shoot and we may not poison the little rascals. Evidently whilst this mawkish sentiment exists, we must smile and bear our troubles. *A. D.*

PEARMAIN APPLES.—The term Pearmain is a very perplexing one to many persons, and often commented upon in a variety of ways by visitors attending fruit shows or a fruit-room. The writer has oftentimes been asked for an explanation, and the answer always given has been based upon the meaning or definition given by the late Dr. R. Hogg in his *Fruit Manual*, wherein the author states that the term Pearmain signifies the great Pear-Apple, and a Pearmain ought to be a long or Pear-shaped Apple. This is, I think, a sufficient explanation for all practical purposes, and one that denotes what should be the chief characteristic of this class of Apple, and which is fully borne out if an examination is made of some of the earliest introduced varieties. Here typical fruits will be found, long or pyramidal in shape, broad at the base, generally regular in outline, and narrowing towards the apex, which is somewhat flattened in some varieties and convex and ribbed in others, with the eye set in a more or less deep depression. The Pearmains known to cultivation number, roughly speaking, about forty varieties, the original or Old Pearmain being not only the earliest introduced, but supposed to be the oldest of our English Apples, and according to Dr. Hogg it has been traced back to the year 1200. With some few exceptions, Pearmain Apples possess long-keeping properties; they are mostly dessert fruits, but the larger kinds will be found equally useful in the kitchen, as they invariably cook well. Most of them, too, succeed as bushes and standards, either in the orchard or garden. The trees are hardy, and generally bear profitable crops of fruit. Many of the varieties, if not so old as the original Pearmain, have been in commerce for a great many years, those having the prefix Adams', London, Hereford, Winter, Lamb Abbey, and Mannington's, being a few which come under this category. Among the more recently introduced varieties, that named Worcester occupies a foremost position, and although not a first-class Apple as regards flavour, it takes front rank as a brilliantly-coloured, early, medium-sized market fruit, and which sells at good prices. A few of the best to grow as orchard standards are Old or Royal, Adams', London, Hereford, Winter, Worcester, and Barcelona. As garden bushes, there are many varieties to select from, for in addition to those already named, Mannington's, Lamb Abbey, Ribsten, Baxter's, Claygate, Hormead's, Rushock, Hubbard's, Christmas, Blue, and Balchin's are all good and reliable.

The highly-coloured Scarlet Pearmain has been omitted, it having been superseded by the larger and more widely-known Worcester, which produces fruit of better quality, whilst it is also possessed of a far more hardy constitution, and is a constant bearer. *A. W.*

THE WOOD LEOPARD-MOTH.—At the last meeting of the Scientific Committee of the Royal Horticultural Society, Mr. McLachlan stated that the caterpillar of this moth really bored upwards through the pith, and not downwards as generally supposed. This is certainly not the case, at least with the wood of the Spanish-Chestnut, for amongst the numerous examples before me not one instance of the caterpillar following the pith is observable; indeed, I should say that no general course is adopted, the tunnels being as often directed from side to side of the branch as lengthways, and the hardest wood is never avoided. I have not heard it denied that the course is generally upwards. *A. D. Webster.*

MARCH WEATHER AT WINDSOR.—We experienced typical weather in the first ten days of the month—stormy and very unsettled, with heavy rain. Frosty nights, and strong, bitterly cold easterly winds have since continued, with frequent showers of snow, sleet, and rain, until the last few days, which have been milder, but changeable. For this district, the air generally was clear and free from fogs; the average duration of sunshine was longer than usual; maximum temperature in the sun, 76°; in the shade, 53°; minimum, 21°; sunshine was registered on twenty-seven days, frost on eighteen days. Rain or snow (·01 or more) fell on eighteen days; on several other days light snow showers, not measurable. Total rainfall for the month was 1·77 inches, the average for March being 1·50. *F. E.*

PEAR BEURRÉ RANCE.—I am obliged by "F. Q. C.'s" reply, and must acknowledge that the quality of Beurré Rance at Lipton is exceptional. I may add in answer to "F. Q. C.'s" enquiry that I am not "getting size at the expense of flavour with the application of so much manure." I cannot afford the trees much manure, and they only get a mulch of strawy stable-manure and clear water, which last is not so abundant here as I should like. The flavour of our wall fruit is first-class, and the colour is exceptional, which are facts that point to something in the soil at Poltimore suits our hardy fruits. Colour is so remarkable in Apples and Pears that it always creates surprise in strangers. *T. H. Slade, Poltimore, Exeter.*

ROOTS AND PLANTING.—After reading the remarks of "A. D." with regard to what I wrote on this subject, I re-perused my own notes, and having again considered all the details mentioned, I do not wish to withdraw or alter anything. "A. D." somewhat confirms what I stated as to differences of soil being a rooting check when he says that this may be obviated by having at hand a barrow with some fine soil to lay about the roots, &c. Just so; we knew this before. Then the tree from the light soil is planted in the same; but where is such to be found handy for the orchard-planter in a heavy clay or loam neighbourhood? This has to be thought of, found, prepared, and carted or barrowed to the spot, while suitable rooted trees at once take to their new surroundings. I am not exactly a novice at fruit-tree planting. Some seventy years ago, as a child, I spent much time watching the process of making an Apple orchard, and listening pleasurably even then to the talk of the workmen as to "how to do it." A year or two ago I visited the place, and with renewed pleasure saw the beautiful and grand results. "A. D." says he prefers the very fully developed, fine-fibred roots; and doubtless so do many others, and he is right for certain soils—but I am perfectly sure not in all. I have not written from hearsay, but from a lifelong observation and considerable experience, and have but given these notes as such. Here I would remark that "A. D." prefers also the old system of having two men to plant, and says that "while one holds up the branches, &c., the other fills in." I did not refer to shrubs, but trees, and I meant orchard trees and standards, and I cannot see the difference to the well-being of the tree between a stake put in after it is planted, and that before. The plan that I advocated, and the one-man planting, is not new to me, but that used by myself for over thirty years, and but lately

my man has planted about 100 trees in this way, and is delighted with its time-saving simplicity. Well, then, if it is wrong, any two men can and will work on in the old way, and be glad to, as it is the more remunerative—to them. But as I have found my one-man method such a perfect success in all ways, I shall obstinately continue to do that which appears to "A. D.'s" more enlightened views to be a wrongful doing of the right thing. And to this must be added, though painful for "A. D." to learn, that the trees so planted always thrive and grow well, and with the two-men process they can do no more, if as much. If all things go well, I intend planting a fresh orchard here, and should I, one man will have to do it, and that on the stake-and-tie principle. It may, according to "A. D.," be a very bad one; but as it is of less expense, and the growth of the trees always highly successful, it is good enough for me, and perhaps may be found so for some others. *Harrison Weir, Poplar Hall, Appledore, Kent.*

THE ROSARY.

NEW ROSES.

A SELECTION OF THEM, AND AN APPRECIATION OF THEIR QUALITIES.

It is evident that of late years our British rosarians have been, for the most part, devoting their attention to the production of Tea Roses and Hybrid Teas. There have, indeed, been a few exceptions, in the highly acceptable form of Hybrid Perpetuals, of which Mrs. Cocker, Rosslyn, and Ulster, have been perhaps the most notable introductions. Rosslyn is an interesting variation from that favourite variety, Suzanne-Marie Rodocanachi. Possessing, as it does, the splendid attributes of the parent Rose, and differing from it only in having a lighter and more delicate complexion, it should prove an acquisition. It is, like Ulster, a native of Newtownards. So also are those beautiful Hybrid Tea Roses of recent introduction, viz.:—Bessie Brown, Liberty, and Lady Clanmorris; of which the variety last-named is by far the most vigorous. Liberty is somewhat lacking (so far as I can judge from observation) in this special direction, though doubtless, like Horace Vernet, it is a very charming crimson Rose. What we chiefly lack is modern varieties of this attractive colour, having the vigour and permanence of Duke of Edinburgh, or Charles Lefebvre. What is gained in depth of colour, seems almost invariably to be lost in strength. Ardsrover is an exception; but it does not flower satisfactorily, at least in my garden. Such "decorative" Roses as Meta and Beryl would doubtless bloom more impressively, if they could only be induced to grow.

Of a somewhat more vigorous constitution, and therefore more reliable, are those recent creations of Mr. Wm. Paul, viz.:—Corallina, Alexandra, and Exquisite. When I saw the first-mentioned Tea-Rose last May at the Temple Show, it seemed to me an improved version of Papa Gontier; in which surmise, however, I may have been mistaken. It does, however, resemble very much that favourite French Rose. Alexandra and Exquisite I have not yet seen (at least in flower), as I only added them during last winter to my extensive collection. But I have no doubt they will prove themselves worthy of their fascinating names; and that is saying much. "What's in a name?" says the greatest of dramatic poets. Well, there is often a good deal of irresistible attractiveness discoverable in the title of a Rose, or even of a human being.

Several Roses of great interest and much decorative capability have of late years emanated from the famous nurseries of Cheshunt, of which Psyche and Royal Scarlet are among the most important for garden cultivation; the former being a pale pink seedling from Turner's Crimson Rambler, a Rose that still maintains its immense popularity. Another of Mr. George Paul's recent and valuable introductions is J. B. M. Camm, a welcome addition to the somewhat too strictly limited Bourbon family. Purity (raised by George Cooling & Sons of Bath), which also belongs to this vigorous section, is a pure white Rose, with the faintest roseate suffusion in the centre, of semi-climbing habit; a precious acquisition. *David R. Williamson, Kirkmaiden Manse, Wigtownshire, N.B.*

Obituary.

THE LATE MAXIME CORNU.—We regret to announce the death, recently, of M. Maxime Cornu, late Professor de Culture or Director of the Jardin des Plantes at Paris. The Jardin des Plantes is, as it were, the head centre of all the botanic gardens in France, in intimate communication with all of them, and they are many. In addition to the superintendence of his department, M. Cornu had to deliver set courses of lectures, and now that France has set her mind on expanding and improving her Colonial Empire, his services were in constant request in supplying information with regard to colonial products and the best way of obtaining them by cultivation. The deceased made a name



THE LATE MAXIME CORNU.

for himself by his researches connected with the Phylloxera, and distinguished himself in the field of Cryptogamic botany. He succeeded our old friend and correspondent, Decaisne, in the direction of the Paris Garden.

PUBLICATIONS RECEIVED.—*The Botanical Exchange Club of the British Isles.* Report for 1899. The plants sent in for name and notice were often badly selected and arranged; in fact, the authorities who examined them were, as usual in these cases, put to unnecessary trouble. Information desired or furnished about British plants should be addressed to the Manchester office of the Club.—*Bulletin of the Botanical Department, Jamaica,* March. This includes notes on: Tobacco, Irrigation and Alkali Lands, Eucalyptus and Malaria, Breadnut, Analysis of Coco-nut, Coffee, and Bananas.

SOCIETIES.

ROYAL HORTICULTURAL.

APRIL 9.—A meeting of the Committees of this Society was held in the Drill Hall, Buckingham Gate, Westminster, on Tuesday last, and the display then made was rather better than might have been expected upon a day immediately succeeding to a Bank Holiday, when the conveyance of exhibits from a considerable distance is a matter of much inconvenience. Most of the exhibits were exceedingly gay with flowers; it was essentially a floral exhibition. Messrs. VEITCH'S double-flowered Cherries, Messrs. CUTBUSH'S and Mr. JONES' Tulips, Messrs. CANNELL'S Pelargoniums, and collections of Daffodils from various cultivators, were among the most showy groups; and there were many collections of hardy alpine and other plants which were less conspicuous, but nevertheless interesting and pretty.

In the afternoon there were elected thirty-six new Fellows of the Society, and before the Rev. GEO. HENSLAW commenced his LECTURE upon some of the more interesting plants in the hall, the Secretary (Rev. W. WILKS) announced that on April 23, the lecture by Mr. BURRIDGE will be postponed, and a special meeting of the Fellows of the Society will be held to approve or disapprove of the purchase of some land (since described as being situate at Farningham, in Kent), on which to make a new garden for the Society.

Floral Committee.

Present: W. Marshall, Esq., Chairman; and Messrs. C. E. Shea, Geo. Nicholson, R. Dean, John Jennings, Jas. Hudson, Chas. E. Pearson, C. J. Salter, J. Fraser, E. H. Jenkins, C. Dixon, Chas. Jeffries, George Gordon, W. P. Thomson, H. J. Jones, J. H. Fitt, W. J. James, Harry Turner, Geo. Paul, C. T. Drury, E. Mawley, H. S. Leonard, R. C. Notcutt, and J. W. Barr.

Messrs. W. CUTBUSH & SONS, Highgate, London, N., and Barnet, Herts, showed a group of single-flowered Tulips in pots, which being cultivated well, made a gorgeous display of colour. Of the varieties shown, we noticed Elloreador, Tournesol, Tournesol Yellow, Leonardo da Vinci, Couronne d'Or, all yellow, or yellow and red; Murillo, beautiful pink colour, with yellow centre; Le Blazon, rather like the previous one, but not so good; Raphael, and Couronne des Roses, also pink and yellow; Rubra maxima, deep crimson, with yellow centre; Vuurbaak, reddish crimson; Blanche Hative, white; &c. (Silver Banksian Medal).

Pelargonium flowers were exceedingly bright from Messrs. H. CANNELL & SONS, Swanley, Kent, who had blooms representing thirty-six varieties of the zonal type, made into very showy sprays, and arranged in trumpet-shaped glasses with a little green relief. All of these varieties were of sterling merit, being large in size and brilliant in colour. Some of the more striking were Mary Hamilton, Sir J. Llewellyn, W. E. Gordon, The Sirdar, Mr. T. E. Green, all scarlet or crimson; Mrs. Brown Potter, pink, with white halo on upper petals; Mrs. Williams, very large pink flower; Winston Churchill, rosy-red, with white centre; Virginia, Mary Beaton, and Snowstorm, all white; Lady Sarah Wilson, white, with mottling of scarlet towards the margins of petals; Mrs. Ewing, pink and white, curiously blended; &c. (Silver Flora Medal).

Messrs. PAUL & SON, The Old Nurseries, Cheshunt, again showed the new H. T. Rose, Lady Battersea, having excellent blooms, together with good stems and vigorous foliage. The varieties Madame de Watteville, L'Innocence, Admiral Dewey, Billiard et Barre, were also represented by satisfactory blooms. Tea Rose Mrs. Treseider is very pale lemon colour, with pretty filbert-shaped buds.

A pretty group of Polyanthus flowering freely in pots was shown by Mr. C. M. BENNETT, 3, Spring Well Mount, Hayes, Middlesex.

Messrs. JAMES VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea, made a very excellent effect with double-flowered Cherries. There were eighty or one hundred plants in pots, the greater number of them being Cerasus Pseudo-Cerasus Watereri, and a few illustrating the newer variety, James H. Veitch (figured in the *Gardeners' Chronicle*, April 25, 1898, p. 517). Watereri has large flowers, rather pale in colour. It is well known, and is rightly esteemed to be a grand ornamental flowering tree. The newer variety is none the less valuable; the flowers are quite as large, and of rich rose colour; the petals being more crimped and flimbriated than those of Watereri. It would make an excellent companion for that variety, which being naturally a fortnight earlier to bloom was shown in better condition on Tuesday last than the variety James H. Veitch (Silver Flora Medal).

Messrs. JAS. VEITCH & SONS had also a few Hippeastrums, including Vesta, white, with scarlet veining on upper segments; Leontes, vermilion; and Somnus, white, with broad scarlet veining. By the side of these was a fine lot of blue Primroses, and plants of Staphylea Coulombieri, said to be a hybrid between S. colchica and S. pinnata; it greatly resembles S. colchica, but appears rather more compact in growth, and the flowers have more substance (see *Revue Horticole*, 1887, p. 462). Edgeworthia papyrifera was shown in bloom (Cultural Commendation).

Messrs. W. PAUL & SON, Waltham Cross Nurseries, Herts, showed a group of forced flowering shrubs in pots, arranged in a long group upon the floor, in the space usually occupied by the central table. Varieties of Almond, Peach, Cherry, and Lilac, &c., were numerous, and there were Viburnum Opulus sterilis, Spiraea media (confusa), Cytisus praecox, Viburnum plicatum, Kerria japonica fl. pl., Prunus tulbii, Staphylea colchica, Pyrus Malus floribunda, Cytisus Laburnum, Forsythia suspensa, Pyrus angustifolia fl. pl., with very large, faintly-tinted flowers; Dentzia corymbiflora, an elegant species, much less common than D. gracilis, which was also shown, &c. (Silver-gilt Banksian Medal).

Messrs. W. PAUL & SON also showed blooms of the following Roses:—Boudicca (Tea), colour pink, with very pretty

THE FLORAL COMMITTEE recommended four Awards of Merit, three of which were to varieties of Hippeastrum shown by Messrs. VEITCH, Chelsea; and the remaining one to Tulipa violacea, from Messrs. BARR & SONS. The prize offered by the latter firm for a collection of Narcissus was not awarded, there being but one exhibitor, PURNELL PURNELL, Esq., who was therefore awarded a Silver Flora Medal.

THE NARCISSUS COMMITTEE held its third meeting of the year, but there were again few flowers shown from the open ground, and their anticipations of the full glory of the Daffodil display having been unduly prolonged, enthusiasts of the flower can scarcely conceal their impatience. The Committee, however, recommended an Award of Merit to a new bicolor trumpet variety shown by Miss WILLMOTT, V.M.H.

THE ORCHID COMMITTEE recommended awards including three First-class Certificates, and five Awards of Merit, and there were seven fine groups of Orchids, six of which were shown by amateurs.

THE FRUIT AND VEGETABLE COMMITTEE had almost a holiday.

lunds; Souvenir de Wm. Robinson (Tea), colour yellow, with red on outer petals, rather flat bloom; and Monsieur Bunel (Tea), flesh tint of pink.

Mr. H. J. JONES, Ryecroft Nursery, Hither Green, Lewisham, arranged a very pretty group of flowering plants in pots. There were Tulips in great variety, Narcissus, Daffodils, Azalea indica varieties, Begonia Gloire de Lorraine, Hyacinths, &c. (Silver Banksian Medal).

Messrs. R. WALLACE & Co., Kilnfield Gardens, Colchester, showed a group of pretty bulbous plants, including Iris orchoides corulea, a very elegant plant, with lavender-coloured flower, 14 inches high; Tulipa Lownei, about 5 inches high, of a pale rose colour; Tulipa triphylla, also new, very variable in colour, from pure yellow to rich orange; Fritillaria pudica, F. citrina, Tulipa Karolkowi bicolor, Erythronium Hendersoni, and others; Iris stylosa, I. caucasica, &c.; Gerbera Jamesoni, Muscari &c. (Silver Flora Medal).

Miss WILLMOTT, V.M.H., Warley Place, Essex, exhibited Fritillaria Karelini, with flowers about 7 inches high, of pale rose colour; also Chionodoxa Lucilie Boissieri, the individual flowers of which are much larger than the type.

Messrs. BARR & SONS, King Street, Covent Garden, W.C., exhibited Fritillaria crassifolia, Iris japonica, with pale lavender-coloured flowers, marked with yellow; Tulipa biflora major, white; &c.

Messrs. GEO. JACKMAN & SON, Woking, had a group of hardy plants, including Narcissus, varieties of Primula Sieboldi, such as Alba magnifica and Queen of Whites; Primula rosea, P. denticulata alba, Incarvillea Delavayi, Fritillaria recurva, with red flowers an inch long; Chionodoxa Alleni, &c. (Silver Banksian Medal).

Messrs. J. HOUSE & SON, Coombe Nurseries, Westbury-on-Trym, again showed blooms of many varieties of Violets; also a group of plants flowering in pots, and were awarded a Bronze Flora Medal.

Messrs. JOHN LAINO & SONS, Forest Hill Nurseries, London, S.E., showed Anthurium Scherzerianum var. triumphans, a variety having a spathe of flesh-pink colour.

Awards.

AWARDS OF MERIT.

Hippensternum Marathon.—A bright crimson-coloured variety, of excellent form and much refinement.

Hippensternum Arvensis.—A bright scarlet flower with white centre in each segment, and white interspersed with the scarlet colour.

Hippensternum Rialto.—A very large flower, with five segments recurving at tips; colour crimson. All the above were shown by Messrs. JAS. VEITCH & SONS, Chelsea.

Tulipa violacea.—A Persian species, with bright red flowers, shaded with violet, and allied to *T. pulchella*. Mr. J. G. Baker in *Botanical Magazine*, t. 7440, where an excellent illustration of the species is given from flowers produced at Kew, says that it is one of the few species that have filaments hairy near the base. The stem is described as being under 1 foot long in the wild state, and those shown on Tuesday were about 5 inches. The leaves are glabrous, and about an inch broad. The segments of the perianth are oblong, subacute, with a large black blotch at the base, bordered with white. Shown by Messrs. BARR & SONS, King Street, Covent Garden, W.C.

Narcissus Committee.

Present: J. T. Bennett-Poë, Esq. (in the Chair); Miss E. Willmott, V.M.H.; and Messrs. G. S. Titheradge, Rev. S. Eugene Bourne, Robert Sydenham, P. Rudolph Barr, John Pope, W. Poupert, Walter T. Ware, G. Reuthe, W. Goldring, W. F. M. Copeland, W. Wilks, H. Kingsmill, and C. Scrase Dickens.

The season being so backward it was not surprising that there should have been no competition for the Cup offered by Messrs. Barr & Sons for a group of Daffodil blossoms, embracing varieties of each section, exclusive of the Polyanthus type. There was one exhibitor, however, namely, PURNELL, PURNELL, Esq., The Woodlands, Streatham, London, S.W., and the Cup being withheld, the Society awarded a Silver Flora Medal in respect of the exhibit. Messrs. Barr intend to offer the Cup for competition at the next meeting.

Messrs. BARR & SONS, King Street, Covent Garden, London, W.C., contributed a large display of Narcissus in pots and as cut flowers. Considerable attraction was caused by a large, bold, yellow trumpet Daffodil named General Roberts, and it was rumoured that £25 each would be asked for the bulbs of this variety. Big Ben, its near companion, was a fine, bi-coloured trumpet, with considerable frill. The new trumpet, Victoria (figured in the *Gardeners' Chronicle*, June 12, 1897, p. 350), was shown; also Weardale Perfection, Katherine Spurrell, and many others (Silver-gilt Flora Medal).

Messrs. J. FEED & SONS, Roupell Park Nurseries, West Norwood, exhibited a group of Narcissus in considerable variety, and in the midst of them two boxes of alpine plants arranged naturally amongst stones, &c. (Silver Banksian Medal).

AWARD OF MERIT.

Narcissus Allen's Beauty.—This is a new trumpet Daffodil; perianth pale sulphur-coloured, and trumpet rich yellow; form good, size moderate. Shown by Miss WILLMOTT, V.M.H.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the Chair; and Messrs. J. O'Brien (Hon. Sec.), de B. Crawshaw, J. Colman, E. Hill, E. Ashworth, H. T. Pitt, W. F. Bilney, W. H. White, F. J. Thorne, H. J. Chapman, W. H. Young, H. A. Tracy, H. Little, H. Ballantine, W. Thompson, and C. J. Lucas.

There was a very fine show of Orchids, Odontoglossums and Dendrobiums being the chief feature.

Of Odontoglossums, Aaron Sir H. SCHRODER, The Dell, Egham (gr., Mr. H. Ballantine), showed a remarkable collection of cut spikes, for which he was awarded a Silver Flora Medal. The collection included the rare Odontoglossum Leeannum, O. × excellens dellense, a fine O. × Andersonianum, with a branched spike of over forty flowers; a remarkable O. × Ruckerianum, with curious confluent red blotches; O. × Wilckeanum "Queen-Empress," and another fine form of O. × Wilckeanum, and O. ramosissimum. A flower of a very finely formed *Lælia Jongheana* was also included.

DE B. CRAWSHAY, Esq., Rosefield, Sevenoaks (gr., Mr. W. J. Stables), staged a grand collection of fine Odontoglossums, the central figure in which was the unapproachable O. triumphans Lionel Crawshaw, perfect in form, extraordinary in the size of all its parts, and rich in colour, for which alone a Silver-gilt Flora Medal was awarded. Among the other fine O. triumphans was an unnamed one of the same class as Lionel Crawshaw; the dark coloured O. t. Raymond Crawshaw, the pretty O. × Adriane Theodora, O. × Andersonianum "Juno," with distinct hexagonal marking; the purple-tinted O. × Ruckerianum rosefeldiense, the little-known O. × Denisonia nebula, new variety; the fine O. × Hallio-crispum Crawshayanum, and O. × loochristiense Mrs. de B. Crawshaw (see Awards).

H. T. PITT, Esq., Rosslyn, Stamford Hill (gr., Mr. Thurgood), was awarded a Silver Flora Medal for a good group, in the centre of which stood a fine plant of *Cymbidium* × eburneo-Lowianum superbum, with five spikes. With it were a good representative collection of the Odontoglossums of the season; *Epidendrum* × O'Brienianum, E. sceptum, the distinct *Lælia purpurata* "Novelty," with pure white flowers with a light pink veining on the lip; varieties of *Cattleya Schroderae*, *Galeandra Devoniana*, *Angraecum fastuosum*, A. leonis, and a good selection of *Dendrobiums*, of which D. nobile, "Pitt's variety," was a grand and novel form, with very thick pseudo-bulbs, and flowers resembling those of D. splendissimum grandiflorum, but of true D. nobile texture and colour. The very large, elongated, and curiously formed lip is a very distinct feature.

W. A. BILNEY, Esq., Fir Grange, Weybridge (gr., Mr. Whitlock), was awarded a Silver gilt Flora Medal for a magnificent group of *Dendrobiums*, profusely bloomed. With them were *Lycaste Skinneri* alba, *Lælia harpophylla*, *Cattleya Schilleriana*, grandly grown, with nine flowers; C. Lawrenceana, C. citrina, *Sophrontitis grandiflora*, and other showy species.

Major JOICEY, Sunningdale Park, Sunningdale (gr., Mr. F. J. Thorne), staged a very remarkable group, evidencing grand culture, the bulk of which was made up of profusely flowered plants of *Dendrobium atro-vilaceum*, of which there were twenty, one of which hung at the back of the group although only some 18 inches across, having 125 flowers. Besides these there were several good examples of *Diacrium bicornutum*, which few cultivators succeed in growing satisfactorily; *Zygopetalum Klaboehorum*, *Cattleya Schroderae*, *Odontoglossum hastilabium*, and *Cymbidium Lowianum*. A Silver-gilt Flora Medal was awarded.

Messrs. JAS. VEITCH & SONS were awarded a Silver Flora Medal for a group rendered very interesting by the presence of three generations of crosses with *Epidendrum Wallisii*, these were *Epidendrum Endresii* and E. Wallisii, the primary parents, and the resultant E. × Endresio-Wallisii, which was used as a seed parent, and crossed again with E. Wallisii, produced the fine E. × elegantulum, which was also represented in several varieties. This crossed with E. Wallisii ♀, produced E. × Clarissa, the most variable of the set, the variety E. × Clarissa superbum being selected by the committee for a First-class Certificate. Also in the group were the beautifully-fringed *Lælia-Cattleya* × Digbyano-Trianæi, and the new *Masdevallia* × Alceste.

W. THOMPSON, Esq., Walton Grange, Stone (gr., Mr. W. Stevens), was awarded a Silver Banksian Medal for a group of handsome Odontoglossums, comprising O. triumphans "Premier," O. × Wilckeanum Stevensii, and O. × W. concinnum, both fine and very dissimilar; O. crispum "Bobby," cream-white, heavily blotched; also *Dendrobium Kingianum*, with many flowers, and a fine *Cochlidium vulcanica grandiflora*.

ELIJAH ASHWORTH, Esq., Harefield Hall, Wiltshire (gr., Mr. Holbrook), in addition to the fine plants mentioned in

the list of awards, showed *Odontoglossum* × *Adriane*, "Starry Night," a very prettily-spotted form; *Cypripedium* × *ciliolare*-*Rothschildianum*, a large form, with some resemblance to C. × Lord Derby; a very fine C. × *Louisa Fowler*, in producing which a special variety of C. insigne and C. Chamberlainianum were used, and *Lælia Jongheana*.

W. P. BURKINSHAW, Esq., Hesse, Hull (gr., Mr. Barker), sent *Cattleya Mendeli* "The Pearl," a fine white flower with a faint pearly blush; *Cattleya Schroderae* "The Gem," and C. S. "Sunshine," both good; and C. × *Parthenia vernalis* (Mossie × *fimbriata*).

J. FORSTER ALCOCK, Esq., Northchurch, showed *Cypripedium* × *Fraseri*.

C. A. SMITH RYLAND, Esq., Barford Hill, Warwick (gr., Mr. Richard Jones), showed several varieties of hybrid *Cypripediums*.

Captain HOLFORD, Westonbirt (gr., Mr. A. Chapman), showed the prettily marked *Odontoglossum* × *Adriane* "Countess Grey," O. × *Andersonianum* "Starfish," and a good *Cypripedium niveum*, with several flowers.

Mrs. HAYWOOD, Woodhatch (gr., Mr. C. J. Salter), showed varieties of *Dendrobium* × *Cybele*, and *Lælia-Cattleya* × G. S., Ball (L. cinnabarina × C. Schroderae), also the pretty copper-yellow L. C. × Haywoodi.

H. F. SIMONDS, Esq., Beckenham (gr., Mr. Geo. Day), sent *Odontoglossum* × *Andersonianum*, "Woodthorpe variety," fine in shape and marking; and the clear yellow O. × *Adriane* "Mrs. Simonds."

R. G. THWAITES, Esq., Streatham (gr., Mr. Black), showed *Dendrobium* × *Euryalus*, "Thwaite's variety," a showy flower.

FIRST-CLASS CERTIFICATE.

Lælia Jongheana Ashworthii, from ELIJAH ASHWORTH, Esq., Harefield Hall, Wiltshire (gr., Mr. Holbrook).—This is the long-expected white *Lælia Jongheana*. Flowers, fine in form, silvery white, with an orange-coloured disc to the lip.

Cattleya × *Miss Harris* var. E. Ashworth (C. Schilleriana × C. Mossie), from ELIJAH ASHWORTH, Esq.—The flower, especially in the labellum, proved conclusively the presence of *Cattleya Schilleriana*, and not *Lælia-Cattleya* as was stated when first shown. Flower of a warm purplish-rose, the exterior of the tube of the lip streaked with purple, and the broad front lobe of a rich claret-purple; base tinged with yellow.

Epidendrum × *Clarissa superbum*, from Messrs. JAS. VEITCH & SONS.—A grand improvement on the Wallisii crosses. Sepals and petals yellow, tinged and spotted with purple, lip violet colour. Habit of E. Wallisii.

AWARD OF MERIT.

Odontoglossum × *Ruckerianum* "Mrs. R. Brooman-White," from R. BROOMAN-WHITE, Esq., Arddarroch, Garelochhead.—Flowers fine in form, cream coloured tinged with rose, the sepals and petals evenly spotted with dark red, except the margins.

Odontoglossum × *Adriane* "Mrs. Simonds," from H. F. SIMONDS, Esq., Beckenham (gr., Mr. G. Day).—Flowers clear pale yellow, with one brown spot on the upper sepal, and several small ones on the lip.

Masdevallia × *Alceste* (Veitchiana ♂, Asmodia ♀), from Messrs. JAS. VEITCH & SONS.—Flower large and showy, dark red, with orange-coloured ground showing through in places.

Odontoglossum × *Denisonia nebula*, from DE B. CRAWSHAY, Esq., Rosefield, Sevenoaks (gr., Mr. Stables).—An interesting plant, connecting us with the original, certificated to Lord Lonsborough, Jan. 17, 1872, and illustrated in the *Floral Magazine*, n.s., 1872, t. 28. The new variety now shown had white flowers, with small cloudy spots on the petals. The flower, like the original, was suggestive of a second crossing of, perhaps, O. × Wilckeanum.

Odontoglossum × *loochristiense* "Mrs. de B. Crawshaw."—A very distinct and showily coloured flower, the greater portion being of the clear yellow colour seen in most O. triumphans. The petals bore but a few bright chestnut-red spots, and the sepals had one large blotch on each.

Mitonia vexillaria gigantea, Rosslyn variety, from H. T. PITT, Esq., Rosslyn, Stamford Hill.—Flowers large and finely formed, almost wholly of a rich rose-purple, the crest being yellow on a white ground. It is an advance on other forms of its class.

CULTURAL COMMENDATION.

To Mr. May, gr. to J. B. JOEL, Esq., Northaw House, Potters Bar, for a splendidly-grown plant of *Cypripedium Rothschildianum* with two fine spikes of three and four flowers respectively.

To Mr. Knowles, gr. to F. CRISP, Esq., Friars Park, Henley-on-Thames, for a large specimen of a good *Lycaste Skinneri* with about thirty flowers.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq. (in the Chair); and Messrs. Jos. Cheal, Geo. Kelf, S. Mortimer, A. Dean, C. Herrin, E. Beckett, J. Wright, W. Pope, J. Willard, A. Ward, Geo. Norman, and James Smith.

Mrs. NIX, Tilgate, Crawley (gr. Mr. E. Neal), exhibited a collection of twenty-nine dishes of Apples in as many varieties. The following sorts were noticed to be in best condition, and are mostly late-keeping varieties: Lane's Prince Albert, Alfriston, Lord Derby, Kentish Beauty, Warner's King, Bismarck, Tower of Glamis, Newton Wonder, Mère de Ménage, Winter Requette, Golden Noble, Winter Queening, Cox's Orange Pippin, Dutch Mignonne, Rymer, Sturmer Pippin (Bronze Banksian Medal).

From the Earl of ILCHESTER's garden, Holland House, Kensington (gr. Mr. Dixon), were shown good fruits of Bergamotte Espereen Pear, well known to be a good variety for late use; and of Stone or cluster Golden Pippin Apple, yellow fruits marked with much russet, and extremely firm at this date.

AWARD OF MERIT.

Pear Bergamotte Espereen.—The committee recommended the above award to this Pear, fruits of which were shown from Lord ILCHESTER's garden at Holland House; but we have since received the following communication from the Rev. W. WILKS, Secretary to the Society, stating that the Council has decided not to confirm the award, but giving no reason for refusing to do so.

"Roya Horticultural Society,
Victoria Street, S.W., April 9, 1901.

"I am directed by the Council to inform you that they have not felt able to confirm the Award of Merit recommended by a majority of the Fruit Committee to-day to *Pear Bergamotte d'Espereen*. The award, therefore, falls to the ground.

"W. WILKS, Secretary.

"By order of Council."

CROYDON HORTICULTURAL MUTUAL IMPROVEMENT.

APRIL 2.—At the usual fortnightly meeting held on the above date, Mr. Newell, of Fairlawn Gardens, Wimbledon, gave a paper on "Floral Decorations," describing the various styles of arranging flowers, and the most suitable materials for the purpose.

A beautiful group of early flowering plants was exhibited by Messrs. J. PEED & SONS; Mr. MILLS staged four well grown plants of *Acalypha hispida*; the Hon. Secretary brought a fine stem of *Dendrobium Ainsworthi* Virgil, and although the stem had been cut over a week, the flowers were still fresh.

SCOTTISH HORTICULTURAL ASSOCIATION.

APRIL 2.—A meeting of the Association was held on the above date. There was a large attendance. Mr. Cumming Grantully Castle, read a paper on Spring Bedding. Little spring bedding in Scotland; for six months in the year beds and borders were black, bare, and cheerless; and in many public parks, bare earth was seen where there might be a varied and beautiful display of spring flowers. Though some Scottish He was led to speak on this subject, because there was so winters were so severe, and the late keen frosts might cause disappointment, the risk was worth taking, and even in the worst of winters the early Daffodils, Wallflowers, Crocuses, and many other early but hardy flowering bulbs, would emerge to beautify beds and borders, and render them all the more pleasing after a long spell of Arctic weather. The gardener's object should be to make his garden attractive at all seasons. Spring flowers can boast of more delicious odours, and far more delicacy and variety of tints than others. Many of the spring combinations far surpass those of autumn. Whole beds of one colour are better than mixed ones. Most spring flowers are dwarf in habit, and where long borders require to be filled, nothing looks better than wide bands of the different coloured, Wallflowers; which will of themselves make a flower garden gay during the early months of spring; and any quantity can be raised from seed. The Aubrietias are valuable and excellent spring bedders; they continue in flower for fully two months. *Alyssum saxatile*, as a yellow, is among the most beautiful and lasting, requiring nothing particular in the way of soil, and it can be produced from seed. Few things for adorning the spring garden can excel the Anemone; its flowers are of the most brilliant and varied hues, and its elegant foliage renders it a most useful plant in the garden. *Cerastium*, *Dactylis glomerata variegata*, alpine *Phloxes*, *Saxifragas* of sorts, and *Violas*, are quite indispensable for spring gardening; there are some well-defined colours amongst them that for effect have no equal. There are many annuals, such as *Collinsia*, *Nemophila*, *Saponaria*, *Silene pendula*, *Escholtzia*, and *Candytuft*, that may be mentioned. Hardy spring-flowering shrubs, both evergreen and deciduous, berry-bearing evergreens, all are suitable for furnishing the flower garden. Speaking of permanent spring gardening, what is prettier than hosts of golden Daffodils, sheets of Snowdrops, and the blue masses of *Anemone apennina*? They make the lawns a very paradise in the mild and genial days of spring. Then there are the Winter Aconites and the Crocuses. Hyacinths massed in colours make a stately bed, and last for a considerable time in flower. Tulips rank high amongst the most showy and valuable of bulbs. Narcissus are accommodating flowers, that thrive in almost any soil, but best in a moderately stiff loam.

WOOD GREEN AND DISTRICT HORTICULTURAL.

APRIL 9.—On the occasion of a meeting held on the above date, R. W. LITTLE, Esq., in the chair, a lecture was given on "Daffodils" by Mr. E. H. Jenkins, of Queen's Road Nursery, Hampton Hill. There was a fair attendance of members, and the lecture, which was treated from the practical standpoint, was well received by the audience. With the assistance of a representative collection of Daffodil flowers, the lecturer was enabled to deal in an interesting manner with his subject. He was accorded a hearty vote of thanks at its close.

Mr. A. PERRY, Nurseryman, Winchmore Hill, exhibited an interesting collection of hardy flowers, for which he was warmly thanked by the Secretary, Mr. E. J. Wickenden, F.R.H.S., on behalf of the Society.

NATIONAL CHRYSANTHEMUM.

By way of adding to the privileges accruing from affiliation with the above society, the Executive Committee this season set apart six of its small silver medals to be balloted for by these societies. The ballot took place a few days ago, and the following were the successful societies:—The Barnet and District Chrysanthemum Society, the Forest Gate and Stratford Chrysanthemum Society, the Isle of Thanet Chrysanthemum Society, the Swansea Working Men's Institute Chrysanthemum Society, the Torquay and District Gardeners' Association, and the Wimbledon and District Horticultural and Cottage Garden Society.



METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period March 31 to April 6, 1901. Height above sea-level 24 feet.

1901.		DIRECTION OF WIND.	TEMPERATURE OF THE AIR.				RAINFALL.	TEMPERATURE OF THE SOIL AT 9 A.M.				LOWEST TEMPERATURE ON GRASS.
MARCH 31 TO APRIL 6.	At 9 A.M.		Day. Highest.	Night. Lowest.	At 1-foot deep.	At 2-feet deep.		At 4-feet deep.				
	Dry Bulb.								Wet Bulb.			
SUN. 31	S.S.W.	deg.	deg.	deg.	deg.	ins.	deg.	deg.	deg.	deg.		
MON. 1	W.	43.9	43.2	50.9	42.1	...	40.8	41.2	43.5	37.3		
TUES. 2	S.S.W.	44.1	39.9	50.4	35.2	...	41.9	42.1	43.5	24.8		
WED. 3	S.S.W.	51.9	50.0	56.7	45.7	0.58	43.9	42.8	43.7	40.8		
THU. 4	W.N.W.	44.8	40.9	58.2	24.1	...	45.6	43.7	43.9	40.0		
FRI. 5	S.E.	40.1	38.4	46.6	33.2	0.02	44.5	44.4	44.0	27.2		
SAT. 6	S.E.	42.4	41.5	55.3	39.7	0.18	43.2	44.2	44.2	21.5		
MEANS...	...	44.6	42.2	53.2	36.5	0.75	42.9	43.0	43.8	30.2		

Remarks.—The weather for the week has been mostly dull, with very cold winds. There were sharp frosts on four mornings, and heavy rain on the 3rd inst.

THE WEATHER IN WEST HERTS.

THROUGHOUT the past week the temperatures have been very variable, but, taken as a whole, the week proved a warm one for so early in the spring. On the coldest night, that preceding the 6th, the thermometer on the lawn showed 8° of frost, but during the following night the same thermometer never fell lower than 46°, or 22° warmer. Both at 1 foot and 2 feet deep the soil temperatures are still slightly below their respective averages for these depths. Since the present month began rain and hail have fallen on seven days, and to the total depth of nearly 1½ inch. Of this amount about three-quarters of an inch has come through both percolation gauges, which is equivalent to a watering of 3½ gallons on each square yard of surface in my garden. During the week the sun shone, on an average, for 4½ hours a day, which is a seasonable duration for the beginning of April. The winds were, as a rule, high, and the air dry for the time of year. *Anemone pulsatilla* came first into flower in my garden on the 4th, and *Fritillaria pudica* on the 8th, or respectively five days and two days earlier than last year. E. M., Berkhamsted, April 9.

MARKETS.

COVENT GARDEN, APRIL 11.

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Asparagus "Fern," bunch	1 0-2 0	Lily of Valley, per doz. bunches	6 0-12 0
Carnations, per doz. blooms	1 6-2 6	Maidenhair Fern, per doz. bunches	4 0-8 0
Cattleyas, per dozen	9 0-12 0	Mignonette, per doz. bunches	4 0-6 0
Encharis, per dozen	2 0-4 0	Odontoglossums, per dozen	2 6-6 0
Gardenias, per doz.	1 6-2 6	Roses, Tea, white, per dozen	1 0-3 0
Lilium Harrisii, per dozen blooms	3 0-5 0	— Catherine Mermet, per dozen	3 0-6 0
Lilium lancifolium album, per dozen blooms	1 6-3 0	Smilax, per bunch	3 0-5 0
Lilium rubrum, doz.	3 0-5 0	Tuberose, per doz. blooms	0 4-0 6
Lilium longiflorum, per dozen	4 0-6 0		

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantums, var. doz.	5 0-7 0	Ferns, small, per 100	4 0-6 0
Arbor-vitæ, per doz.	6 0-36 0	Ficus elastica, each	1 6-7 6
Aspidistras, per doz.	18 0-86 0	Foliage plants, var., each	1 0-5 0
— specimen, each	5 0-10 6	Lily of Valley, each	1 9-8 0
Cannas, per dozen	18 0-—	Lycopodiums, per dozen	3 0-4 0
Crotons, per doz.	18 0-30 0	Marguerites, per dozen	8 0-12 0
Cyclamen, per doz.	8 0-10 0	Myrtles, per dozen	8 0-9 0
Dracenas, var., per dozen	12 0-30 0	Palms, various, ea.	1 0-16 0
— viridis, per doz.	9 0-18 0	— specimens, each	21 0-63 0
Ericas, var., per doz.	12 0-86 0	Pelargoniums, scarlet, per dozen	0-12 0
Enonymas, various, per dozen	6 0-18 0	— ivyleaf, per doz.	8 0-10 0
Evergreens, var., per dozen	4 0-18 0	Spiræas, per dozen	6 0-12 0
Ferns, in variety, per dozen	4 0-18 0		

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, English, per bushel	4 0-5 0	Grapes, Almeida, doz. lb.	7 0-10 0
— cookers, large	4 0-5 0	— Belgian, per lb.	0 10-1 9
— various	3 0-5 0	Lemons, case	7 6-15 0
— Nova Scotia, per barrel	16 0-20 0	Lychees, new, pkt.	0 10-—
— Californian, per box	9 6-11 0	Melons, each	2 0-5 0
— Wellington	8 0-10 0	Oranges, Navel	21 0-—
— Tasmanian, case	8 0-15 0	— Bitter, case	8 0 0-9 0
— Cape, case	5 0-—	— Blood	6 6-12 6
Bananas, bunch	5 0-8 0	— Murcia, case	7 6-—
— loose, per doz.	1 0-1 6	— Valencia	13 0-—
Jobnuts, lb.	0 6-0 6	Pears, Californian	—
Crabberries, case	16 0-—	— Easter Beurre, half cases	12 6-—
Grapes, Alicante, lb.	2 9-3 6	Pines, each	2 0-4 6
— Colmar, A, lb.	2 6-4 0	Sapucaia nuts, per lb.	1 0-—
— Colmar, B, lb.	2 0-2 6	Strawberries, per lb.	4 0-6 0

VEGETABLES.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe, per doz.	3 0-—	Lettuces, Cos, doz.	2 6-4 6
— Jerusalem, sieve	0 9-1 0	Mint, per dozen bunches, new	6 0-—
Asparagus Spruce	0 9-—	Mushrooms, house, per lb.	0 10-1 0
— Paris Green, bun.	5 0-5 6	Onions, picklers, per sieve	2 0-3 0
— home - grown, per bundle	6 6-7 6	— per bag	2 0-3 0
— Spanish, bundle	2 4-2 0	— cases	10 0-10 6
— Giant, bundle	8 0-12 0	— English, p. cwt.	—
— various, from	1 6-—	— bag	4 6-5 0
Beans, dwf. Madeira, per bkt.	2 0-—	— Egyptian, bags	4 0-5 0
— Ch. Islds. and home, dwf., new, per lb.	1 0-—	— new, bunches, per doz.	2 6-—
— French, dwf., packets	0 4-—	Parsley, 12 bunches	1 0-2 0
— Broad, in flats	4 0-—	— per sieve	0 9-1 0
Barbe de Capucine	0 4-—	Parsnips, per cwt.	—
Bestroots, bushel	1 3 16	— bag	1 6-—
Beet, per dozen	0 6-—	Peas, dozen lb.	4 0-—
Broccoli Sproutings, bushel	0 9-1 0	Potatoes, per ton	85 0-130 0
Brussel Sprouts, per sieve	1 0-—	— New, per cwt.	10 0-14 0
Cabbage, tally	5 0-6 0	— New French, per lb.	0 20-2 4
— dozen	1 0-1 3	— New Frame, Channel Islds., per lb.	0 5-0 6
Carrots, 12 bunches	1 6-2 0	Radishes, per 12 bunches	1 0-1 3
— washed, in cwt.	2 0-2 6	Rhubarb, Yorks, per dozen bundles	1 3-1 6
Cauliflowers, p. doz.	1 6-3 0	Salad, small, punnets, per dozen	1 3-—
— crate	10 0-14 0	Savoy, per tally	3 6-5 0
— tally	8 0-12 0	Scott's Kale, bush.	9 9-1 0
Celeriac, per dozen	3 0-3 3	Seakale, per dozen punnets	18 0-21 0
Celery, doz. bundles	12 0-15 0	Shallots, new, per lb.	0 2-—
Chicory, per lb.	0 2-0 3	Spinach, English, per bushel	4 6-5 0
Cress, doz. punnets	1 6-—	— Salsify, bunch	0 4-—
Cucumbers, doz.	3 0-4 0	Tomatoes, Canary deeps	2 0-3 0
Endive, new French, per dozen	2 6-—	— English, new, per lb.	1 6-—
— Batavian, doz.	2 6-—	Turnips, per dozen	1 6-2 0
Garlic, lb.	0 2-—	— in bags	1 6-2 0
Horseshoe, Eng-lish, bundle	1 0-1 6	— new, bunch	1 0-2 0
— foreign, per bunch	0 9-1 0	Turnip-tops, bush.	1 0-—
— loose, per dozen	1 6-—	Watercress, p. doz. bunches	0 6-—
Leeks, per dozen bunches	1 0-1 6		
Lettuces, French Cabbage, doz.	1 6-—		

REMARKS.—Egyptian Onions are arriving in better condition, and they are easier in price. New Tomatoes grown under glass are now coming in. Cape Pears per case fetch ss. to 5s.; Grapes, 2s. to 14s.; Plums, Peaches, and Nectarines, appear to be over.

POTATOES.

Various sorts, 85s. to 105s. per ton; foreign bags, 50 kilo, 4s. to 5s.; Dunbar Main Crop, per ton, 125s. to 130s.; Up-to-date, 130s. John Bath, 32 & 34, Wellington St., Covent Garden.

SEEDS.

LONDON: April 10.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., report that on account of the recent holidays, and more particularly the persistently unfavourable weather, which seriously retards field operations, the sowing demand for all kinds of farm seed has of late been on a much smaller scale than is usual at this period of the year. Nevertheless, as regards Clover-seeds generally, values are well sustained. Perennial Ryegrasses, however, still move downwards, whilst imported Italian remains firm. The market for Mustard and Rape-seed is steady. Spring Tares are scarce, and firmly held. There is no alteration in this week in either Sanfoin, Timothy, or Lucerne-seeds. Blue Peas, Haricot Beans, and German Lentils are slow on former terms.

FRUIT AND VEGETABLES.

GLASGOW: April 10.—The following are the averages of the prices recorded since our last report:—Grapes, English, 2s. 6d. to 3s. per lb.; Mushrooms, 1s. 3d. to 1s. 6d. do.; Tomatoes, Canary, deeps, finest medium, 8s. 6d. to 4s. per case; others, 2s. 6d. to 3s. do.; Potatoes, Malta, 8s. to 10s. per cwt.; Onions, Egyptian, 3s. 6d. to 4s. per cwt.; Valencia, 4s. 8s. to 8s. 6d. per case; 5's, 8s. 6d. do.; Apples, Canadian: Baldwins, Spies, Greenings, Russets, &c., 16s. to 25s. per barrel; Americans, various, 15s. to 25s. do.; Maine and Boston, 16s. to 25s. do.; Californian Newtown Pippins, four in a row, 10s. 6d. per case; Oranges, Valencia, ordinary, 420's, stamped paper, 10s. to 11s. per box; do. plain paper, 9s. 6d. to 10s. 6d. do.; large 420's, stamped paper, 12s. to 13s. do.; do. 420's, plain paper, 11s. 6d. to 12s. 6d. do.; extra large 420's, stamped papers, 13s. to 14s. 6d. do.; do. 420's, plain papers, 12s. 6d. to 13s. 6d. do.; large 714's, 13s. 6d. to 14s. 6d. do.; Jaffas, 144's and 152's, 12s. 6d. to 14s. 6d. per case; Lemons, Palermo, 300's, 6s. to 7s. 6d. do.; 300's, 6s. 6d. to 8s. do.; Bananas, Jamaica, 5s. 6d. to 8s. 6d. per bunch; extras, 9s. to 10s. do.; No. 1, 6s. 6d. to 8s. do.; No. 2, 5s. 6d. to 6s. 6d. do.

LIVERPOOL: April 10.—Wholesale Vegetable Market.—Potatoes, per cwt.: Bruce, 4s. 4d. to 4s. 9d.; Up-to-Date, 4s. 3d. to 4s. 6d.; Main Crop, 4s. 6d. to 5s.; Turnips, 8d. to 10d. per dozen bunches; Swedes, 1s. 2d. to 1s. 4d. per cwt.; Carrots, 2s. 3d. to 3s. 3d. do.; Onions, English, 5s. 6d. to 6s. per cwt.; do., foreign, 3s. 6d. to 4s. 6d. do.; Parsley, 6d. to 8d. per dozen bunches; Cucumbers, 3s. 6d. to 4s. per dozen; Cauliflowers, 1s. 3d. to 2s. 6d. do.; Cabbages, 6d. to 1s. 3d. do. *St. John's*: Potatoes, 1s. 2d. per cwt.; new, 2d. to 8d. per lb.; Grapes, English, 4s. do.; foreign, 1s. do.; Pines, English, 5s. each; Apples, 4d. to 6d. per lb.; Pears, 4s. per dozen; Tomatoes, 6d. per lb.; Peas, 6d. do.; Asparagus, 1s. to 3s. per bundle; Cucumbers, 6d. each; Mushrooms, 1s. 6d. per lb. *Birkenhead*: Potatoes, 1s. to 1s. 4d. per peck; new, 2d. to 6d. per lb.; Peas, 8d. do.; Cucumbers, 4d. to 5d. each; Mushrooms, 1s. 4d. to 1s. 6d. per lb.; Filberts, 10d. do.

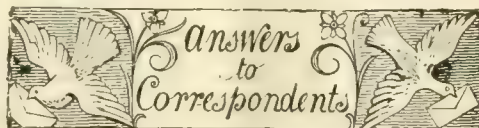
CORN.

AVERAGE PRICES of British Corn (per imperial qr.), for the week ending April 6, and for the corresponding period of 1900, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1900		1901		Difference.
	s.	d.	s.	d.	
Wheat	25	10	26	3	+ 0 5
Barley	24	10	25	3	+ 0 5
Oats	17	2	18	0	+ 0 10

A LONDON ROADSIDE MARKET.—Few better specimens of a London roadside market for fruit and flowers are to be found than that flourishing in the immediate vicinity of the Farringdon Road station of the Metropolitan Railway—most especially on Saturday afternoon and evening. Last Saturday was a record occasion, preceding as it did Easter Sunday, when so many cut flowers were required for church and chapel decoration. But enormous quantities of fruit changed hands, among them the following:—Oranges, Apples, Dates, Grapes, Bananas, Lemons, Pine-apples, Pears, and Lychees. Then in cut flowers were to be found Tulips, Pelargoniums, Hyacinths, Pansies, Roses, Wallflowers, Violets, Daffodils, Lilies, Poppies, Narcissus, Primroses, Anemones, and Mimosa. Among plants in pots and in mould were Pelargoniums, Hyacinths, Wallflowers, Roses, Asters, Begonias, Sweet Williams, Lupines, Daisies, Ribbon Grass, Ferns, Chrysanthemums, Ruby Castle Carnations, Marigolds, Fuchsias, Sweetbriar, Passionflowers (blue), Stonecrop, Polyanthus, Crocus, Peonies, Hollyhocks, White

Roses, Primroses, &c. Of course there were, in addition, heaps of packets of seeds, and the bustle was kept up unceasingly from mid-day until late at night, and the results, we venture to predict, were satisfactory all round.



CHERRY-BLOOMS INFESTED WITH MINUTE MAGGOTS: *Crispum*. No maggots were found when the package was opened, but the injury they had caused was plainly visible. When the buds began to swell, and again ten days later, apply Paris Green at the rate of 1 lb. of the poison to 200 gallons of water, or in the case of Cherry-trees under glass, to 300 gallons. Keep the mixture violently stirred, or the arsenite will fall to the bottom of the vessel and do harm. When the leaves fall in the autumn, collect and burn them.

CHRISTMAS ROSE, HELLERBORUS NIGER: *Alpha*. The best kind of soil is a heavy friable loam of good depth and well drained. If manure be necessary, make use of that only which is decayed. Let the soil be trenched. The plant will bear a certain amount of shade—not thick shade, but that afforded by, say, Apple and Plum trees. It is injured by removal, therefore the stations should be well prepared, and the plants let alone for years. The best method of propagation is by division of the root-mass, and several buds should exist on each detached piece, and the most suitable time is early spring, or immediately leaf-growth begins. If planted in sunny situations it is a good plan to place pieces of rock round about the plants, these acting as conservators of moisture; and during spells of rainless hot weather water should be copiously afforded occasionally—more especially if the soil be of a light sort. The plant is an excellent subject for cultivating in big pots and small tubs, which, stood in the cold greenhouse, afford blossoms in advance of the plants out of doors.

CUCUMBER SEED SAVED FROM SMALL FRUITS: *J. D.* Provided the variety commonly grows to a fair size, there is no need to anticipate smaller fruits from the seeds saved; that is, if over-cropping of the plants is not practised.

DORSET PEA-GRAVEL: *Gravel*. If you will advertise your requirements in these columns, and ask for the price per cubic yard of Hoggins, you will readily obtain that which you need.

FUNGUS-INFESTED SOIL: *C. B.* The soil is full of the mycelium of some species of fungus, which in that stage is unrecognisable. The soil should certainly not be employed in potting, but be spread thinly on the ground in the kitchen garden for a few weeks, and then be turned under deeply.

GREENHOUSE IN WHICH PEACH-TREES ARE PLANTED IN THE FRONT: *C. H., Southsea*. If the Peach-trees do not throw much shade, Asters and Cucumber plants would succeed, but the Cucumbers should be of the Long Prickly and Short Prickly or Gherkin varieties, which do not require much, if any, bottom-heat. It will be better for the Peach-trees if French Beans be kept out of the house, so as to avoid the risk of infesting the foliage of the former with red-spider, nearly always present on Beans under glass. In the other part of the house Tomato plants would succeed, either in pots or planted out, but they must be afforded the fullest sunshine. When these have fruited, it will afford shelter to Chrysanthemums. A *Manual on Peach-growing* is sold by Mr. Uccott Gill, Bazaar Office, 170, Strand, London, W.C.

GRUBS ON TOMATO-ROOTS: *Leatherjacket*. The larvæ of the daddy-longlegs, *Tipula oleracea*, which nothing will destroy that will not also kill the plant. Hand-picking is in your case the best remedy, both as regards the soil to be used and that in which the seedlings are growing.

LEAVES SPOTTED BROWN: *J. B.* Caused by drip. We have sent your P.O. to the Royal Gardeners' Orphan Fund.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—Constant Reader, *Huddersfield*. *Cattleya Trianae*, pale variety.—*B. Bennett*. *Streptosolen Jamesoni*, a greenhouse plant of great beauty.—*J. L.* 1 and 2, old varieties of *Camellia japonica*, of the Pæony-flowered section; 3, *Brunfelsia calycina*; 4, *Polygala Dulmaiseana*; 5, *Stauntonia latifolia*; 6, *Passiflora Constance Elliott*.—*R. W.* 1, *Iris reticulata*; 2, *Calanthe Regnerii*; 3, *Epidendrum ciliare*.—*T. M. G., Preston*. 1, *Odontoglossum crispum*; 2, *O. crispum*, good variety; 3, *O. × Andersonianum*; 4, *O. × Ruckerianum* (both are combined as *O. × lanceans*); 5, *O. crispum*. The spot on the sepals is not sufficient to warrant a varietal name; 6, *O. laeve*, often called *O. Reichenheimi*.—*Parietaria*. 1, *Sisyrinchium grandiflorum*; 2, not recognised; 3, *Primula marginata*; 4, a species of *Cytisus* which we do not recognise; 5, *Cytisus racemosus*.—*C. L. B.* 1, Weeping Elm; 2, Copper Beech; 3, Peach.—*J. L. P.* 1, *Coronilla Emerus*; 2, *Cyperus laxus*; 3, *Fuchsia procumbens*; 4, *Onychium japonicum*; 5, *Davallia car-vensis*; 6, *Asplenium lucidum*.

NOTICE TO LEAVE SERVICE: *Constant Reader*. In the absence of a written agreement, the law regards the gardener as a domestic, and therefore a yearly servant, liable to give and take six months' notice, but in practice this is usually reduced to one month.

PEACH-FLOWERS FALLING: *G. C.* We cannot tell what has caused the flowers to wither and fall from the trees, not possessing a knowledge of the conditions under which you cultivate them. Being in an orchard-house, you state they have not been subjected to the action of frost, and this suggests the question—Are the roots kept sufficiently moist? Fully expanded flowers may wither and fall from no other reason than that there has been no effective pollination. You should see to this, and, if necessary, distribute the pollen by means of a camel's-hair brush.

SOUVENIR DE LA MALMAISON CARNATIONS: *Alpha*. Old plants would flower in the summer out-of-doors at about the usual period for other varieties of Carnations, and plants under a year at a later date. They are scarcely suitable for open-air cultivation, excepting in the warmest parts of the country, the flowers not expanding well; and being very double and heavy, they suffer from sun, wind, and rain more than others.

TEMPERATURE ON THE GRASS, AND AT 3 FEET ABOVE IT: *Alpha*. The minimum temperature is usually taken by thermometers, specially made, the so-called "minimum" thermometers. That the lowest temperature is found on land that is covered with grass is due to the rapid evaporation of moisture and loss of heat. A thermometer hung at 3 feet from the ground is less under the influence of the soil, whether of heat or cold, than if it lay directly upon it, hence the difference in the scale readings of the two thermometers, even should a proper "maximum" not be in use.

TO COVER BRINK OF POND CONSISTING OF A BRICK WALL, 7 INCHES HIGH: *E. T. B.* *Aubrietia deltoidea*, *A. græa*, and others; *Linaria cymbalaria* (Toad-Flax), small-growing *Ivy*, *Iberis coræfolia*, *I. sempervirens*, *Thymus lanuginosa*, and other hardy creeping plants.

VINE-LEAVES MINUTELY SPOTTED ON THE UNDER SURFACE: *J. Cleave*. The work probably of a mite, *Phytoptus*, which punctures the epidermis. If very abundant it would injure the leaves. You should occasionally vaporise the viney with Richards' XL All as a preventative.

COMMUNICATIONS RECEIVED.—*Hortensia*, London, telegram with thanks.—A. O. W.—T. E. T.—G. Cwn.—W. R. H.—G. S.—E. C.—A. O'N.—W. P.—J. B.—W. W.—A. D.—J. S.—D. R.—D. S. F.—R. D.—H. W. W.—H. T. M.—E. B.—E. J.—B.—A. D.—H. J. D.

GARDENING APPOINTMENT.

We have to correct an error in our issue of March 30, in which Mr. GILBERTSON is described as formerly Head Gardener at Glenrhyd, Pontardawe. The announcement should have read, that Mr. T. F. JONES, formerly Head Gardener to A. GILBERTSON, Esq., of Glenrhyd, had been appointed Head Gardener to J. G. NEWTON, Esq., of Maesydderwen, Ystradgynlais, S. Wales. We regret the error the more, as it has caused annoyance to Mr. GILBERTSON, who has been the recipient of numerous circulars from nursery men and others evidently intended for the gardener.



HYDRANGEA, IN THE GARDENS, NORMANTON PARK, STAMFORD (EARL OF ANCASTER).



THE

Gardeners' Chronicle

No. 747.—SATURDAY, APRIL 20, 1901.

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A GARDEN OF OLD-FASHIONED FLOWERS.

A FRIEND of mine once made a beautiful garden, containing none but flowers mentioned by Shakespeare. This, however, was after all but a piece of pretty pedantry, and would not at all have appealed to Fleur-de-Lys. She would not have been without her Foxgloves, and Forget-me-Nots, and Snowdrops, for all the writings of Shakespeare; and it is indeed strange that he, the greatest poet of gardens as of other things, never mentions these flowers, although they must have been well known to him. Speaking of the Snowdrop, Gerard, who was a contemporary of Shakespeare, said: "These plants doe grow wilde in Italy, and the parts adjacent, notwithstanding our London gardens have taken possession of most of them many years past." This rather indicates that the Snowdrop then held a very different place in the gardener's heart, than the place which it since has won; and doubtless the same holds good of the other flowers which Shakespeare left unnamed. If Shakespeare were writing now, using the names of flowers as he used them—"not to show his own knowledge," but because the particular flowers supplied the appropriate simile or key to sentiment—he could scarcely fail

to mention the Foxgloves or Lady's Fingers, the sweet Forget-Me-Nots, and more beautiful still, the chaste, unflinching Snowdrops, sadly smiling, full of pity for the ever-verdant hope which yearly they stir in the breast of the flower-worshipper. A flower takes time—generations even, it may be—really to eat its way into the heart of man; for it is not enough that it be merely beautiful or merely fragrant—attractive to our senses though these properties be—in order that we may really become incorporate with a flower. But it must, in addition, be full of association, and have been long watched and lovingly studied. There is one book, difficult now to obtain, which Fleur-de-Lys valued very highly, as containing a record of the truest appreciation and most careful study of flowers, and of the beauty of flowers, which we have in the language. That book is called *Flowers and Gardens*, by Dr. Forbes Watson, and the following passage from its pages beautifully explain the sentiment of the gardener who grows mainly old-fashioned flowers, or, at any rate, flowers with which he has been long familiar:—

"We make the acquaintance of any individual existence under an immense number of different aspects, and it is the sum of all these aspects which constitutes that existence to us. A Snowdrop, for instance, is not to me merely such a figure as a painter might give me by copying the flower when placed so that its loveliness shall be best apparent, but a curious mental combination or selection from the figures which the flower may present when placed in every possible position, and in every aspect which it has worn from birth to grave, and coloured by all the associations which have chanced to cling around it. To the bodily eye which beholds it for the first time it might be of no consequence what lay within the petals, though even then the imagination would be whispering some solution of the secret; but to the eye of mind, when the flower has been often seen, that hidden green and yellow which is necessary to complete the harmony becomes distinctly visible—visible, that is, in that strange, indefinite way in which all things, however apparently incompatible, seem present and blended together when the imaginative faculty is at work. The common Star of Bethlehem (*Ornithogalum umbellatum*) is a good illustration of the working of this principle. When I look at the beautiful silver-white of the inner surface of the petals, my mind is always dwelling upon and rejoicing in the fact that their outer side is green, though of that green outside I cannot see a hair's breadth. Again, we find the same principle at work in the feeling which compelled the old sculptors to finish the hidden side of the statue. They said, 'For the gods are everywhere.'"

There are people of whom we say (indeed, it is possibly true of everyone)—à bas the cynics—that the more intimately we know them, and the longer we know them, the more we see to love and admire. So it is with a really beautiful plant, and for this reason they who would obtain all the possible pleasure and beauty from their gardens should become, not gardeners only, but also botanists and students of poetry and of beautiful form.

In spite of Shakespeare's omission, then, Fleur-de-Lys grows many species of Snowdrops; indeed, for a week or two in February the garden seems to be all draped with their green leaves and serene green-white "drops," yet not one podgy, graceless double flower is there among them all. For she agrees with Forbes Watson that the "doubling" of beautiful flowers generally results in deformity and the destruction of all beauty and meaning. Double Roses, Pinks, and Carnations, she grows of course; for their fragrance, their

history, and, in the case of Roses, their continuous bloom compensate to some extent for the loss of character in the petals, and for the "pen-wiper" appearance which has only too often been given to the individual flowers. To return to the Shakespeare garden, one finds that Shakespeare's floral year began practically with the Daffodil.

"When Daffodils begin to peer,
With heigh! the doxy o'er the dale,
Why, then comes in the sweet o' the year."

The yellow Crocus seems to have been introduced into English gardens whilst Shakespeare was writing his plays, and there was then, alas, no *Gardeners' Chronicle* to bring him the news. Gerard describes it as having "flowers of a most perfect shining yellow colour, seeming afar off to be a hot glowing coal of fire. That pleasant plant was sent unto me from Robinus, of Paris, that painful and most curious searcher of simples." Dear old Gerard, quoted to rags as it were! Yet, what pictures are summoned before our mind's eyes even by the few words just requoted: "pleasant plant;" "sent unto me from Robinus of Paris;" "that painful and most curious searcher of simples;" each phrase shows a type of mind or a view of life.

The garden of Fleur-de-Lys is a "pleasant" garden, and she, too, is a "curious searcher" of beautiful and pleasant plants. That is why her garden seems to be an old-fashioned garden, and not because it is at all like Shakespeare's garden, or Mary Arden's garden, or the hideous Elizabethan gardens pictured in the *Hortus Floridus*, published in 1614. Her's is no Wardour Street garden, but it is old-fashioned in the sense that some of Heal's bedsteads are old-fashioned, or that beautiful English prose is old-fashioned, as contrasted with what one may call Tottenham Court Road gardens, and the English of the yellow press.

Fleur-de-Lys would not be without her Snowdrops, and quite as emphatically would she not be without her Crocuses. Great clumps everywhere, among the shrubs, at root of trees, by the path-sides, they radiate light and beauty like so many fairyland flashes. First come the Violet cups of *Crocus imperati*, often before January has passed; then the brilliant array of yellow *Crocus luteus* (overwhelming the Snowdrops, by then well past their chief beauty and chief interest), followed by Crocuses of every shade of purple, lavender, and white. These, like the Snowdrops, are left quite undisturbed year after year, and if there be some little falling off in the size of the flowers, which is doubtful, there is more than compensation in the added beauty which the resulting gradation of colour and natural grouping yield. When I think of these glories, I can but reflect on how much beauty my friend's academic "Shakespeare-garden" goes lacking. Indeed, we shall all do well to steer clear of formulas and rigidity, as well in our aims as in our garden-beds. *Harry Roberts, Cornwall.*

ORCHID NOTES AND GLEANINGS.

"DICTIONNAIRE ICONOGRAPHIQUE DES ORCHIDEES."

THE species and varieties figured in the March number of this very serviceable periodical are:—

CALANTHE VEITCHII X. — A cross between *Limatodes rosea* and *C. vestita*. It was raised by the late Mr. Downing in 1856, and was described in the *Gardeners' Chronicle*, 1859, p. 1016.

CALANTHE VESTITA VAR. RUBRO-OCULATA. — A Burmese species, flowering in winter.

CATASETUM SPLENDENS VAR. *LINDENI*.—A supposed hybrid between *C. macrocarpum* and *C. Bungei*; native of Venezuela. A magnificent set of these plants was introduced by M. Linden in 1894.

CATTLEYA HARRISONIANA VAR. *ALBA*.—A beautiful white-flowered variety, which has been found wild near Rio de Janeiro.

CATTLEYA WALKERIANA.—Synonymous with *C. bulbosa*, Lindley, in the *Gardeners' Chronicle*, 1871, p. 623. Native of Brazil. Flowers rosy-lilac.

CHONDROBYNCHA CHESTERTONI VAR. *MAJOR* (Reichenbach f. in the *Gardeners' Chronicle*, xii., 1879, p. 648).—Flowers primrose-yellow, sepals entire, oblong, acute; petals a little shorter and broader, undulate, and toothed at the margin; lip broad, oblong, bilobed, fringed at the edges, and marked with reddish spots at the base. Native of New Granada.

CYPRIPEDIUM MINOS VAR. *YOUNGEI*.—A cross between *Cypridium Spicerianum* and *C. Arthurianum* ×, which latter is the result of a cross between *C. insigne* and *C. Fairrianum*.

LELIO-CATTLEYA HÉRODE.—A cross raised by Mr. Peeters by fertilising *C. O'Brieniana* with *Laelio-Cattleya elegans* var. *Turneri*. It is supposed to combine within itself the characters of *Cattleya Loddigesii*, *C. dolosa*, *C. Leopoldi*, and *Laelia purpurata*. Flowers rosy-lilac; lip expanded, white in the centre, with a reddish-purple blotch in front.

MASDEVALLIA ERYTHROCHAETE (Reichenbach, in the *Gardeners' Chronicle*, xviii., 1882, p. 392).—Remarkable for its small, cup-like spotted flowers, whose segments are prolonged into long purplish tails. Native country doubtful.

ONCIDIUM TIGRINUM VAR. *MONTEPIORE* (Cogniaux).—A pale variety of the type, which appeared in the collections of M. de Lairette, of Liège.

STENORHYNCHUS SPECIOSUS MACULATUS.—A species remarkable for its long, many-flowered, erect spikes, the bracts and outer portions of the segments of a clear red colour. Native of Central America and the West Indies.

ZYGOPETALUM ROSTRATUM.—Remarkable for its large expanded white lip. Native of Guiana and North Brazil.

DENDROBIUM NOBILE "BIZARRE."

Mr. Francis H. Moore, Royal Infirmary, Liverpool, sends a very remarkable flower of *Dendrobium nobile*, taken from an imported plant flowering for the first time. It is a fine flower, with the colouring of *D. nobile nobilissimum*, but with the tints displayed in blotches and stripes, the highest colour being on the outside of the sepals and petals. The face of the sepals is white, and they are furnished with an irregular margin of a purple tint. The base of the petals is likewise white, and the outer portions are flaked with purple; lip as in ordinary *D. nobile*, but with the frontal band of purple, slightly flaked with rose colour. The reverse of the flower is the showier. *D. nobile Backhousianum* displays in some degree similar characters, and a number of plants almost identical with Mr. Moore's flower bloomed with Mr. Norman C. Cookson out of a batch resulting from crossing *D. nobile Cooksoni* and *D. n. nobilissimum*.

A MIDLAND GARDEN.

(Continued from p. 118.)

As we have no glass in this garden, we have to depend entirely on outdoor culture. Consequently, between the disappearance of the Asters in November and the opening of the yellow Jasmine in January, we have nothing for the vases on the dinner-table but evergreens and Holly berries. I had some Christmas Roses once, but they seem to have died out, and the Winter Honeysuckle (*Petasites fragrans*) has not put up a single head of flowers this season. I should be glad if anyone could suggest a reason. The prettiest thing in the garden quite recently was a bed of Snowdrops and yellow Aconites mixed. The single and the double Snowdrop are here together, and there is some difference of opinion as to which is the prettier. For simple modest grace and poetic association, the single form takes the lead, but for making a showy and effective bed, the double is the better plant; there is so much more of it. What is the cause of double flowers, and what do they mean in the economy of Nature? The additional petals are formed partly from altered stamens, and partly by new petals produced among or around the stamens. Many double flowers are rendered quite sterile by the abortion of all the stamens, but it is not always so. Some stamens are often left unaltered, and seeds though altered still produce some pollen. Others are saved from semi-double flowers, in order to get

flowers more completely double in the next generation. When a plant shows a tendency—an effort of nature—to double its flowers, this effort can be assisted, and given the best opportunity to develop itself by isolation and selection. But the most complete doubling means sterility, and if all the flowers of any species became so doubled in a state of nature, that species would die out in time, even if there were other means of propagation such as stolons or bulbils. It seems to me that the natural doubling of the flower may mean that the species has reached the climax of its life, that its work in the world is done, and that therefore reproduction

at hand. He could not bear to see this irregular mass, and snipped them all off. I would have waited till the bloom was over. *Berberis stenophylla* × wants similar treatment if you expect a mass of bloom. There is a large, old *Crataegus pyracantha* on one end of the house which had been badly pruned for some years; it was a wall of greenery nearly a foot thick, with only two or three bunches of berries this winter. I have cut it close in all over, leaving spurs only 2 to 3 inches long, and scarcely a green leaf anywhere. I hope for better results next year, if not this. *Clematis montana* is another desirable plant, but difficult to



FIG. 92.—RHODODENDRON ARBOREUM ALBUM, FIFTEEN FEET HIGH, IN THE GARDENS AT TREMOUGH, CORNWALL.

(Photographed by S. Wyndham Fitzherbert, Esq.)

is no longer needed. I think we ought to regard the production of a brightly coloured corolla not primarily as a lure for insects, but as the ultimate aim of vegetable life, viz., the development of the greatest possible beauty. When any species has done what in it lies to further this great end, it gives place to another.

I observe that many gardeners when pruning flowering shrubs pay little attention to the wood on which the flowers are naturally borne. Their object is to prune to a compact and rounded shape, and in so doing they frequently cut off most of the flowering shoots. I had a fine bush of *Weigela rosea*, and reckoned upon a good show of bloom on the long straggling shoots of last year's growth. But the pruner came one fatal day when I was not

manage on a house, because it must be left in a loose, untidy state in order to blossom freely. I have planted one this winter at the foot of a small dead tree, in the hope that it will cover the bare branches, and hang down in masses of bloom.

It has been one of my pleasant hobbies to collect an herbarium of dried plants. During the last sixty years I have got together about 15,000 specimens, about two-thirds British species, and one-third foreign. The collection includes mosses, Hepaticæ, lichens, and marine Algæ. I would recommend all young gardeners, if they can anyway find the time, to adopt a similar hobby. I have found the herbarium of immense use to me, both as a lesson in the preparing of it, and as an invaluable store for reference in the naming of

plants with which you are not familiar. Though I have already 10,000 examples of our native plants, I rarely take a walk in the lanes or fields without bringing home some fresh form or some better specimen to add to my stock, and of course whenever I get anything new in the garden a specimen of it goes into the herbarium. If any young gardener wishes for information as to modes of preserving, mounting, or arranging specimens, and will write to me, I shall be pleased to give him all the aid I can. Nearly every public museum contains an herbarium of some kind, which can be seen by any applicant. Or if a young man knows of any botanist living in his neighbourhood, he may ask to see his private collection with assurance of a welcome. Botanists are always of a generous and friendly disposition. I believe the largest herbarium in the world is that at Kew. I know one private gentleman who has a collection of over 200,000 specimens. Such large numbers

were never seen here till 1861, when Mr. Fortune, the well-known traveller, brought a male plant. I have one male bush, and have obtained berries by artificially fertilising the females, but the stamens are apt to be withered before the stigmas are ready. I see it is recommended to keep the pollen between two slips of glass until the stigmas are fully developed. The fertilising is best done with a camel's-hair brush, but it may be done by merely placing a panicle of the male plant upside down among the flowers of the female at the right time.

The ultimate cause of variegation in leaves, as of doubling in flowers, is still undetermined. Kerner says it must be regarded as a pathological phenomenon, an effect of some diseased or abnormal condition. But since it adds variety and richness to the colouring of nature, it is open to question whether it does not, like the coloured corolla of flowers and the doubling of them, indicate an

difference of conditions would cause sugar to be formed in one species and acid in another; and if the juice of the unripe fruit had a slightly blue tinge it would be turned red by the presence of acid, so that acidity and redness would be found together, while the more sugary fruit would be without the red colour.

I am just planting a bed of Jerusalem Artichokes. We find them a most useful vegetable, either simply boiled like Potatoes, or cut up and fried, or rubbed through a sieve for a delicious thick white soup. They are the hardiest things in the garden, will grow anywhere, want no attention, and always yield a good crop. "Jerusalem" is a ridiculous name for them. They come from Brazil [North America. Ed.], and have no connection whatever with Jerusalem, that name being merely a corruption of the Italian "Girasole," a Sunflower. The plant is a species of Sunflower, and Sunflower Artichoke would be a proper name for it.

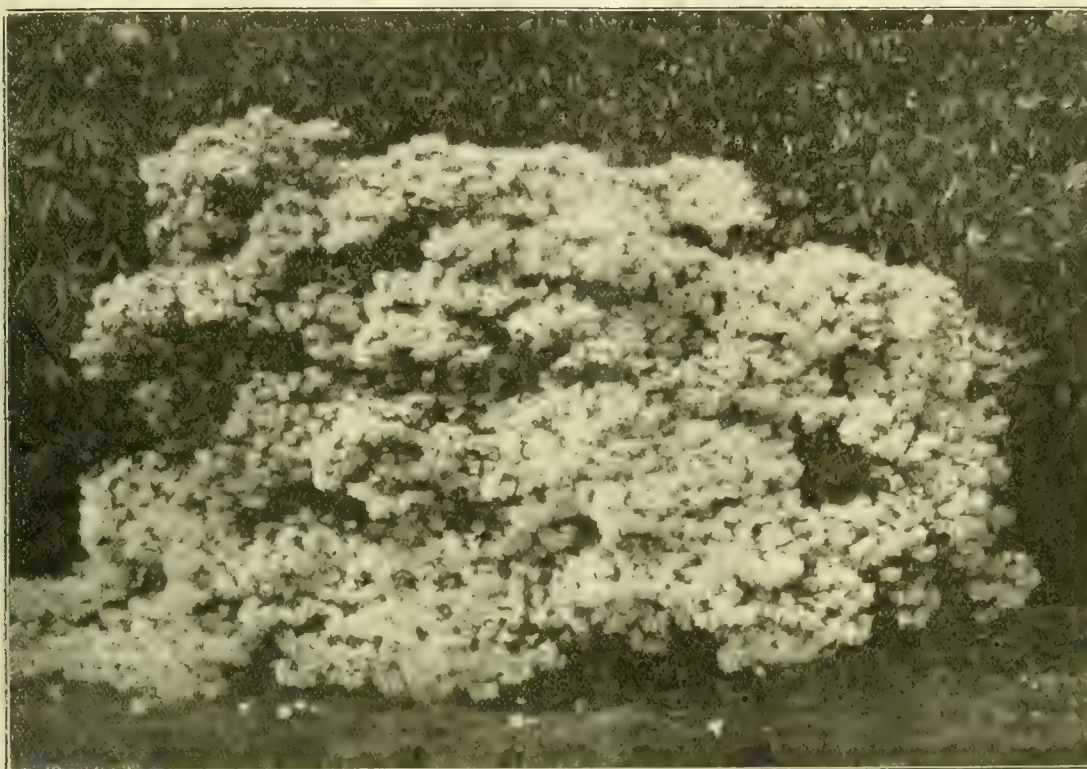


FIG. 93.—RHODODENDRON CILIATUM, SEVENTEEN FEET THROUGH, IN THE GARDEN OF D. H. SHILSON, ESQ., TREMOUTH, CORNWALL.

(Photographed by S. Wignallum Fitcherbert. Esq.)

can only be accumulated by purchase from collectors in various parts of the world.

A pretty object in the garden just now is *Berberis Darwini*, with its bright red flower-buds nestling like coral beads among its dark green leaves. I have five species of *Berberis*, viz., *Darwini*, *Wallichiana*, *stenophylla* ×, *japonica*, and *aquifolia*. They are all interesting and desirable shrubs. *B. japonica* is more singular than elegant; its huge, leathery and spiny leaves have quite a ferocious look. The *Barberries* are particularly useful as flowering early, in March and April, brightening the garden before the Lilacs and Laburnums tell us that summer has come at last. I have three varieties of variegated Holly, also the variegated forms of Box, *Alaternus*, *Cornus mas*, and *Negundo* Maple. The *Aucuba japonica* seems to be naturally and permanently variegated. Perhaps there is an original green form in Japan, but only the variegated form was brought to England in 1783. [Green forms are not uncommon in gardens. Ed.] It is a dioecious plant, and as only the female was brought over at first, the berries

approach towards the maturity of the species. The subject of natural colour is a wide and deep one. It is a question of molecular statics. The brighter the colour the more fixed and rigid must be the molecules of the coloured surface. Growth and development tend to limit the motions of the molecules, thus diminishing their capacity for absorbing light, and increasing the amount reflected. This view has not yet received the attention it deserves.

As a profitable garden crop, there is nothing better than one of fine dessert Raspberries. They must be cut off with scissors, leaving a quarter to half an inch of stalk to each fruit. The best town fruit dealers will often give 8d. a pound for such Raspberries, and will take considerable quantities. Good soil, not too stiff, with plenty of manure and water, is what the Raspberry likes. White Raspberries, when well ripened, are rather sweeter, and have more flavour than red ones. It is the same with the White Currants. Why is this? It has been suggested that as sugar and vegetable acids have nearly the same chemical composition, a small

In clearing away the dead flower-stalks of the tall Golden Rod this winter, I found many of them from which I could cut a stake 18 inches long, quite strong enough for tying up Carnations, Stocks, and other light summer flowers. I see I have a bundle of about fifty of these, neat and straight, and being brown in colour they will be less conspicuous than white wood.

I notice on the trunk of the Tulip-tree a number of horizontal rings, formed by slightly raised ridges entirely round the trunk, and at various distances of from 1 to 3 inches apart. I have seen the same thing on other smooth-barked trees, such as Beech and Horse-Chestnut. No reasonable explanation occurs to me. Can any reader suggest one? *F. T. Mott, Birstal Hill, Leicester (March).*

NEW PALMS.

(Continued from p. 217.)

MALORTIEA SIMPLEX, *Wendland*.—A very curious dwarf Palm from Central America, formerly in cultivation at Kew, but now, as far as I know, it is

not to be found in gardens. I was very much pleased when I received fresh seeds, and still more when I saw them germinate. This dwarf Palm attains a height of about 2 feet. The erect stem is as thick as a lead-pencil, and is furnished from base to apex with petioled leaves. The leaves are about a foot long—of this length the sheath occupies $1\frac{1}{2}$ inch; the petiole is 5 inches long, but very thin; the lamina $6\frac{1}{2}$ to 7 inches long, 3 to $3\frac{1}{2}$ inches broad, cuneate-oblong, entire, without any division at the apex. One peculiarity is the serrature of the leaf margins, at the first glance the leaf resembles that of some American Oaks, with serrate leaves, or a broad leaf of a *Castanea vesca*. But if you look nearer, you see that there is a serrature much resembling that of *Licuala*. But the Palm has no fan-shaped leaves! The main rachis runs through the blade, and, as in another species, viz., *Malortia gracilis*, Wdl., shows that the genus belongs to the group with pinnated leaves. It is akin to the *Arecinæ*, but curiously enough the first leaf is not bifid, but single, without any serrature; indeed, the young seedlings which I have bear much resemblance to those of a young *Licuala*, but are without serratures. The *Malortia simplex* is an interesting Palm also, because it does not like either water or light. It grows in the forests on stony loamy soil, where the water quickly runs away. So it would be a good Palm for rooms, as it does not need moist air. In countries where the air is saturated with moisture certainly it will grow also in the living room. Besides *M. simplex* and *gracilis* there is still a third species, distinguished by leaves which are fenestrate near the main rachis, i.e., the division begins at the main rachis, but is not continued to the margin. Though this species is not yet in cultivation, I hope to introduce it shortly. *Udo Dammer*.

PLANT NOTES.

MOOREA IRBORATA.

ALTHOUGH ten years have elapsed since this representative of the new genus founded by Mr. Rolfe to commemorate the name of Mr. F. W. Moore, the sympathetic Curator of the Royal Botanic Gardens, Glasnevin, was described and figured in the *Gardeners' Chronicle* (vol. viii., s. 3, 1890, p. 7), it is only recently that the public have had the opportunity of admiring its handsome flowers. The illustration is now reproduced (fig. 94). The plant now flowering in Kew Gardens bears two erect spikes, one of which carries sixteen flowers 2 inches in diameter, with spreading petals and sepals of a peculiarly reddish-brown colour, but nearly white at the base. The lip, which is articulated to the short foot of the column, is deeply 3-lobed, of a straw-yellow ground colour, marked with radiating dark purple lines. The pseudobulbs bear two petiolate and plicate leaves 18 inches to 20 inches long, and nearly 5 inches broad, reminding one of a *Houlletia*, to which it appears somewhat related, although it differs from it in the lip, being without a claw and articulated with the base or foot of the column, and also by its epichile not being articulate with the hypochile. Although the origin of this interesting plant is not known for certain, it is surmised that it is probably a native of the Andes of New Granada or Peru, the plant which first flowered with Mr. F. W. Moore having been acquired by him at a sale of Orchids imported by Messrs. Shuttleworth & Co. from that district. It is said to be an easily-grown and free-flowering plant, doing well in the Cattleya-house.

GERBERA JAMESONI, AND NEW CLEMATIS.

This pretty, hardy perennial, which is also known as the Transvaal Daisy, is of recent introduction. It is one of the comparatively few known *Compositæ*, with flowers of orange-red colour. As now seen in Messrs. J. Veitch & Sons' houses at Chelsea, they form a very interesting feature, their solitary flowers, borne on long, slender stalks, being well shown above the foliage. In company with the above are also two comparatively new *Clematis*, "Marcel Moser" and

"Nellie Moser," both conspicuous through the perfect form and great dimensions of their flowers, which measure nearly 9 inches in diameter. Those of the former are of a mauve ground colour, the middle of each petal being ornamented with a broad red band; while in those of the latter the



FIG. 94.—MOOREA IRBORATA: SINGLE FLOWER.
(Natural size.)



FIG. 95.—MOOREA IRBORATA.

Spike half natural size; colour pale brownish-red; lip straw-coloured with blackish-purple markings.

ground colour is almost white, and the red band in the middle of the petals is of a much brighter and warmer tint. That these varieties are very free-flowering there can be no doubt, as the plants referred to, although only in 6-inch pots, carry five or six flowers each; it may be added that they are perfectly hardy. *G. Schneider*.

THE ROSARY.

CLIMBING ROSES.

HOW TO TREAT WILLIAM ALLEN RICHARDSON AND CRIMSON RAMBLER—CAUSES OF FAILURE—SOME CHESHUNT ROSES—SINGLE ROSES—PENZANCE BRIARS—A FEW NEW CLIMBING VARIETIES OF ROSES.

(Concluded from p. 216.)

THERE are two climbing Roses which are to be found in almost every garden, large or small, both very vigorous and free-flowering, and very effective for the ornamentation of the garden. These are William Allen Richardson and Turner's Crimson Rambler—the former of these has been out for nearly a quarter of a century; it was raised by the widow Ducher at Lyons. It is a Rose of very attractive colouring, being deep orange-yellow edged with white. As a button-hole or Rose for personal decoration it is universally admired, yet sometimes it causes some considerable disappointment, for if planted against a wall, the way in which many Teas and Noisettes are planted, the white is apt to spread itself over the whole flower, and it loses its peculiar charm of colour. I have myself suffered in this way, and have hoped each year that it would mend its manners, but it has not done so, and I must now disestablish it. On the other hand, if placed on a fence where there is no hot wall to interfere with it, it is very brilliant, and no matter when you go to it, from May till October, you may be sure of being able to gather some buds. Like all these Roses when expanded, its peculiar beauty vanishes.

Crimson Rambler has had a wonderful popularity; it is a Polyantha Rose coming to us from Japan. It is most extraordinarily floriferous, displaying pyramids of crimson rosettes; yet some persons complain they cannot bloom it—the cause of this is, I think, not far to seek. Inexperienced gardeners will treat it, in the matter of pruning, as they do other Roses; and I am continually receiving letters from correspondents asking how it is to be treated, and whether it is to be pruned like other Roses? I need hardly say that, in reply to this latter question, the answer is in the negative; it forms new rods every year, and on these depend the bloom for the following year. The old wood must be cut away, and the new wood tied in. It, too, has its peculiarity: if planted against the wall, it is apt to be infested with red-spider, therefore a pole or a fence is the proper place for it.

Of late years, single Roses have very much come into favour as climbing Roses; some of them are most vigorous, and, in fact, too much so for small gardens. The single Polyantha, from Japan, *Polyantha simplex*, is a remarkable example of this. I remember seeing it in the garden of my late friend, T. W. Girdlestone, at Sunningdale, covering an enormous space of some 30 or 40 feet, and it was a sight not easily forgotten.

Another very beautiful and free species is *macrantha*, large, clear white, with golden stamens. Paul's Single White is very similar to this, except that the stamens are dark. The same Cheshunt firm has given to us two very beautiful single Roses in *Carminé Pillar* and *Paul's Royal Scarlet*; their names are sufficiently characteristic to show what they are, but it may be added that they are very free flowering, and sometimes you may get autumn blooms from them. To the late Lord Penzance we are indebted for the remarkable break in climbing Roses known as the *Penzance Sweet Briars*. There was a considerable number of these raised, but I think that the two first sent out are the most striking—*Lord* and *Lady Penzance*. *Lord Penzance* is a bright fawn in colour, very vigorous and free-flowering; *Lady Penzance* is also vigorous, free-flowering, and a rich coppery-yellow. *Amy Robsart* is a deep rose colour, of the same habit, vigorous and free-flowering. *Flora McIvor* is white, edged with rose, and very attractive; while *Meg Merrilies* is a bright crimson. It must be borne in mind that these Roses have an additional charm, in that they retain the perfumed foliage of the Sweet Briar.

One other Rose, more brilliant than any of these, is Bardon Job; it is not quite single, a glowing crimson in colour—I should almost have said scarlet. It was raised by Nabonnand in 1877, and he described it as a hybrid Tea; it is very hardy and distinct, it is not very floriferous in autumn—at least not according to my experience.

Ard's Rover, a beautiful climbing Rose, raised at Newtownards, is of a colour we have not had before in climbing Roses, a brilliant crimson, shaded maroon, very vigorous, free-flowering, and likely to be in much request as a button-hole Rose; its foliage is very large and handsome. It will thus be seen that there is abundance of choice for those who wish to grow these so-called Climbing Roses, and when judiciously used they add much to the beauty of the garden. *Wild Rose.*

to the glass in frames or low pits, affording ample space for the development of the foliage, as upon doing this much future success will depend; maturity of the wood being an absolute necessity in flowering the Chrysanthemum, which can only be obtained by treating the plants properly from the start.

Green and black fly is at this stage somewhat troublesome, infesting the points of growth, and if allowed to remain unmolested, quickly cripples the shoots by disfiguring the young leaves and checking the growth. Let all infested shoots be dusted over with tobacco-powder in the evening, and syringe the plants the next morning, thus freeing the plants from the powder and the insects. Now is a suitable season to prepare a stock of plants of new varieties for the special purpose of obtaining

ODONTOGLOSSUM CRISPUM "ROSSENDALE."

By the kindness of Richard Ashworth, Esq., Ashlands, Newchurch, Manchester (gr., Mr. Pidsley), we are enabled to give an illustration (fig. 96) of this fine form of *Odontoglossum crispum*, which he considers the handsomest of the many blotched varieties which he possesses. The flower is of fine substance, the sepals white flushed with purplish-rose; petals white; both sepals and petals showily blotched with red-brown, a delicate rose-coloured flush giving a peculiar softness to the darker colour of the blotches. The lip is white, with a base of a yellow colour. It bears some brown blotches, and a row of small brownish marks extends round inside the margin. Column purplish on the upper side.

MARKET GARDENING.

THE CULTIVATION OF VIOLETS FOR PROFIT.

APRIL is the best month in which to make plantations of Violets, either for flowering where they are planted, in pits and frames, or in pots placed near to the roof-glass in structures where a temperature may be afforded of, say, from 45° to 50° at night during November and four following months, and from 50° to 60° during the day with fire-heat, rising 10° or 15° higher with sun-heat.

The soil should be fairly light in texture, and have been enriched by well-decomposed stable-manure, dug or ploughed into it some time previous to setting the young plants therein, in rows at from 15 to 18 inches apart, and 1 foot from plant to plant in the rows.

When the plants have done flowering, dig them up, shake all the soil from the roots, divide the individual clumps into as many little plants as there are crowns, and cut close back any roots that may be attached thereto. This done, dibble the plants into the ground, which should have been harrowed a few days beforehand. Press the soil moderately firm about the plants, being careful to keep the crown or heart of the several plants a little above-ground. If the weather be dry, afford water to settle the soil about the plants, the applications being repeated every alternate day, in the absence of rain, until the plants have made fresh roots. Instead of watering, after this stage, stir the surface of the ground between the rows and plants with the Dutch-hoe at short intervals.

When the plants have sent out several runners each, the points should be pinched beyond the embryo plants of all the strongest growing runners, so as to concentrate the energies of each plant to the development of from ten to fifteen large, solid, well matured, flowering crowns by the end of August, by which time good gatherings of "Sweet Violets" should be possible. The end of September or early in October, according to the character of the weather at the time, will be soon enough to take up plants intended for planting in pits and frames, or for transferring into pots varying in size from 4½ inches to 8 inches in diameter, the plants being taken up with good balls in every case. In transplanting the plants into pots and frames, allow 3 or 4 inches clear space between the plants every way, and about 2 inches between the foliage and glass, in fact the nearer the plants are to the roof-glass without touching it the better it will be for them. Make the soil fairly firm about the balls of earth and roots in planting, watering to settle the soil about the roots. Keep the pits and frames close for a few days after planting, and syringe the plants lightly overhead in the afternoon of bright days to freshen them up, in case any check may have been experienced in the process of transplantation. Four or five days from the date of planting, this order of things should be reversed, as the plants will have completely re-established themselves during that short interval of time; the



FIG. 96.—ODONTOGLOSSUM CRISPUM "ROSSENDALE."

FLORISTS' FLOWERS.

CHRYSANTHEMUMS.

As the pots fill with roots, re-potting becomes necessary. No matter for what purposes the plants are required, even for planting in the border, the roots should not be cramped for lack of space until they are in their flowering-pots. Many plants get spoiled from neglect in regard to this matter, and are crippled for a length of time.

To grow the plants satisfactorily, growth should be free and uninterrupted from first to last. Let the potting be done firmly, use clean, well-drained pots, and a compost consisting of two parts turfy loam, one of half-decayed horse-manure, with wood-ashes, silver sand, and charcoal in quantity according to the nature of the loam. To each bushel of compost add 1½ lb. Thomson's Vine Manure.

If the soil is moist, as it should be at potting time, and the balls are well moistened, no water should be required for several days, more especially in weather like the present. Keep the plants close

plenty of cuttings of approved or shy-growing varieties, and upon which there is likely to be a run for cuttings.

When topping the plants to induce a bushy growth, to retard or hasten a particular bud in forming, let the top be cut low enough to make a stout cutting. Insert this singly in a small pot in sandy soil, plunge in gentle bottom-heat, and roots will quickly form. Gradually harden off the young plants in a cold frame, and repot as fast as the plants demand space, until finally the plants come into 7-inch pots. Do not again interfere with the main stem, but allow it to grow uninterruptedly until a flower-bud forms in the point; then remove all shoots that cluster around it, thus confining the whole energy of the plant to the development of one bloom upon each plant. Not only will a good batch of desirable cuttings thus be obtained, but each plant with one specimen flower will be useful for grouping or for room decoration.

Plants throwing up early suckers will also furnish plants as good if these are taken off and treated in a like manner. *E. Molyneux.*

sashes being drawn off and left so day and night, weather permitting. The evil to be guarded against in the cultivation of Violets in cold pits and frames during the winter and early spring months is damp.

Low span-roofed houses in which Melons, Cucumbers and such-like crops have been grown during the summer and autumn months, with an improvised stage fixed on either side the central pathway on a level with the wall-plates, may be profitably filled with pot Violets during the winter. The bulk of the plants should be potted up into 48 and 32-size pots—that is, in the event of the cultivator living within easy reach of flourishing towns in which no difficulty would be experienced in disposing of flowering plants in the above-mentioned pots to florists, &c. The plants in 8-inch pots would be specially reserved for supplying blooms for gathering. I do not for a moment suggest that the fully-developed flowers on the plants growing in the 48 and 32-size pots should not also be picked at the right time from plants not bespoken by the florists. Violets thus grown would command top prices, seeing that they would be obtainable in mid-winter irrespective of the nature of the weather prevailing at the time, the plants in the size pots mentioned being disposed of, say, in the month of March, while still floriferous and healthy-looking enough to realise a fair price; they would, on the whole, yield a satisfactory return for the outlay incurred in the process of cultivation.

Of course, the plants grown in pots should be kept uniformly moist at the roots during the whole period of growth. Occasional top-dressings of some approved artificial manure, given before applying clear water at the roots, will greatly assist in the continuous production of large flowers, borne on sturdy footstalks or stems. A slight spraying overhead occasionally with tepid-water will tend to keep the plants clean and healthy.

As to varieties, Marie Louise still holds the field as a double, the flowers being lavender-blue and white; Comte de Brazza being a fine large double white-flowering variety, and, like Marie Louise, very floriferous. Princess of Wales is the best single, producing with great freedom large purple flowers on stems from 5 to 8 inches long when well grown.

TOMATO PLANTS IN MARKET GARDENS.

The more expeditious method of pricking-out into shallow wooden boxes rather than into pots having been adopted with the seedlings, the plants will be now growing apace under glass in positions near the light that will ensure stocky growth. Plants treated in this manner succeed to a better extent than when grown in pots, if they are placed no nearer together than about 4 inches apart. Of course, boxes for pricking-out should have some sort of drainage material placed at the bottom. When the plants are established in the boxes, the rather close treatment they have been subjected to will be gradually reversed, more air and more water being afforded. When planting-time comes, the plants will be about 6 inches high. It is all very well to grow on a few plants in 6 and 8-inch pots, with a few clusters of fruit already set and swelling, for planting against walls, but it will not pay to grow plants on in this manner and in quantity for market purposes. I have no hesitation in saying, that plants raised and grown on as recommended above, would yield many more "pounds, shillings, and pence."

Tomatos should be planted in rows at from 24 to 30 inches apart, and at 1 foot from each other in the rows. The ground should have received a fair dressing of decayed stable-manure, and a ploughing a short time previously, but no harrowing until it is about to be planted. The soil should be made fairly firm about the roots, and water afforded. The plants may be secured to galvanised iron-wire of 14 gauge, fixed to posts or short stakes standing 30 inches out of the ground. A soft sort of string in 2 lb. balls is sold by horticultural sundriesmen for the purpose of tying the plants; this string should be cut into lengths of

about a yard, according to the height of wires from the ground; secure one end loosely round each plant, and fasten in a running knot round the wire. As the plants grow and require support, twist them gently round the individual strings, and pinch all lateral growths when they appear. Chemin Rouge is still a favourite Tomato for field culture, Comet standing well as second favourite. H. W. Ward, Lime House, Rayleigh, March 25.

THE WEEK'S WORK.

THE HARDY FRUIT GARDEN.

By C. HERRIN.

Fruit Blossom.—The cold winds and sunless days have made the expansion of the blossoms more than usually late, and in this district (South Bucks) much of the Peach and Nectarine bloom of trees trained on walls having a southerly aspect is not fully open. Where thick coverings are used to protect the bloom, these should be removed from the trees, unless sharp frosts appear imminent, slight frost not injuring the blossom of wall trees. Standard fruit-trees have as yet no expanded bloom.

Disbudding and Thinning of Apricots, the blossoms of which are now fairly set, may commence, removing a few of the young growths and fruits which are pushing behind the shoots, and the under side of the branches, and where shoots will not be laid in for filling vacant spaces, removing but few at first, and going over the trees several times at weekly intervals. If green or black aphides be observed, dust the infested shoots with tobacco-powder, and when the blossoms are well set, afford a wash of some approved sort of insecticide. This will apply especially to Peaches and Nectarines, these trees being more subject to infestation by insects than others.

Outdoor Figs.—Figs in Southern England fruit well in any warm spot, and in some districts as bushes in the open fields, but the plant does best in calcareous soils. Where the soil is not of this character, lime or chalk must be added, as well as brick-rubble, stones, shells, &c., and it must not be of a rich nature. A border of a few feet square, if made up of this kind of material, will be ample, and if it be enclosed by a wall of stone or brick set in mortar, the growth of shoots will be kept within a fruitful limit. If the subsoil be retentive and undrained, a layer of brickbats or stones a foot in depth may be placed at the bottom of the border, about 2½ feet from the surface. The soil about the roots, and below and above, should be made firm, as unless this be done, fruitfulness will be looked for in vain. Fig-trees may be planted at any time during this month, if the plants have been previously standing in the open. Should it be desired to fill a space as quickly as possible, a fair-sized tree may be turned out of a pot, and the roots loosened by shaking away the soil, shortening some of the largest, spreading out the rest, and covering them with some fine particles of soil, arranging the roots at various levels. Before proceeding to fasten the branches to the wall permanently, wait a month or longer. If a tree one year old be planted, let it be cut back to within a foot of the base, and train-in the new breaks on either side of the stem, and thus form the basis of the future tree.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. I. MEASURES, Esq., Cambridge Lodge, Flodden Road, Camberwell.

The East Indian-house.—The use of much fire-heat in the warmer Orchid-houses during the recent cold weather, has not been without its deleterious effect upon the plants, and in this garden many of the East Indian plants have shed their lower leaves. *Aerides* and *Vandas* have suffered considerably. The cold weather has delayed the repotting of these plants, but signs of vitality in them having become noticeable, the work should be attended to without further delay. These plants should not be turned out of their pots annually, and more especially when the roots have become attached to the pots; for notwithstanding every care, it is an impossibility to detach them without injury. I do not have the plants turned out, unless they have become unsightly through the loss of their lower

leaves. This is only natural decay. Mr. Boxall and other collectors in the East tell us that these sections of Orchids do better under cultivation than in their native wilds, and that it is rarely indeed that they meet with a plant with more than from ten to twelve pairs of leaves, although the stems may be from 10 to 15 feet in length, which have probably been growing for a very long period of time. The best method of dealing with a large leggy specimen is to turn it out of its pot, and to cut away as much of the stem as will bring the foliage down to within a few inches of the rim of the pot, and give due consideration to the position of the aerial roots on the bare stem, and it does not matter much at what point the stem is severed; but there are cases in which no roots are found on the stem, and under those conditions the roots creeping about the sides of the pot must be retained. I find it then best to procure a larger pot, and having cut away the dead tissues at the base, place the roots in the pot, bending and twisting the stem so as to bring the leaves as near to the rim of the pot as is practicable; filling the pot with clean crocks, with a small quantity of sphagnum-moss about the roots, some crocks being placed over all up to within an inch of the rim, and affording a covering of living sphagnum-moss, pressed moderately firmly, and mounded slightly in the centre. If the stems still show bare places, let a few large crocks or charcoal be placed thereabouts above the moss, and build up some of it about them. The stems of a plant that has been disturbed in this manner should be secured separately to strong stakes. When repotted or top-dressed, afford the plants rain-water copiously from a water-can having a moderately coarse rose; shade from bright sun-light, and keep in a close and very humid house, and afford very little air previous to the formation of new roots of some size and number.

Aerides.—Species of small growth, as *A. Lobbiai*, *A. Schroderae*, *A. maculosa*, *A. Veitchii*, and *A. Fieldingii*, rarely require to be turned out of their pots, but the state of the compost and of the drainage should be ascertained, the stagnation of moisture about the roots being a danger to be carefully guarded against. Although the flower-spikes are making progress, no harm will be done by the renewal of the compost. The pots, the stages, and roof-glass, should be cleansed before the plants are re-arranged in their proper quarters.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bicton, East Budleigh, Devonshire.

Culinary Peas.—In order to be assured of a constant and regular supply of Peas for the table from the end of May and onwards to late autumn, seeds should be sown fortnightly till the end of the month of June. It is not now advisable to sow the seed thickly as earlier in the year, 1 quart being sufficient for sowing 110 feet of drill. Even then, if all of the seed germinated, it would be advisable to thin where they were most crowded. Some gardeners sow Peas in trenches prepared as for Celery, others on ground that has been well manured and deeply dug; but, having given both methods a trial, I favour the latter, considering that the plants have the chance of a more extended root-run than when confined in a trench, more especially if the entire plot be dug over. If trenches are preferred, these should be dug out of a width and depth of 18 to 20 inches, the manure being placed at the bottom, and the greater part of the soil thrown out placed above it. This soil should be made firm before the seed is sown in the drills, which should be flat at the bottom, 6 inches in width, and 3 inches in depth; this applies to either method. [Nitrogenous manure should not be used on land to be cropped with Peas. Potash and lime are better aids to growth. Peas may well follow an exhausting crop, the potash being applied as a top-dressing, twice repeated during growth. Ed.] Dust the young plants frequently with lime and soot. Mould up and stake the plants before they begin to run, letting the points of the Pea-sticks cross each other from side to side of the rows, so as to enable the rows the better to withstand the wind.

Broad Beans.—Sowings of Beans may be made at three-weekly intervals, in deeply dug, rich soil. The sowings made in May and June on a north border do well, but present sowings need a warmer site. Make good the blank spaces in the lines, and mould up advancing plants.

Celery.—If ground be now available for this crop, and it does well after Parsnips, Broccoli, &c., it would be well to get out the trenches for the earliest crop. If for a single row of plants, the trench should be 1 foot wide, and for two rows 18 inches or 20 inches; and the trenches 3 feet apart for the former, and 4 feet for the latter. The soil may be taken out two spades deep, and the manure be then put in, placing 6 inches of soil above it; or it may be taken out one spade deep, and the manure thrown in and dug in. The space between every other trench can be cropped with two rows of Lettuces or one row of Dwarf Beans, both coming off before any earthing up is required, the unoccupied ridges between the trenches being reserved for walking upon.

Rhubarb and Seakale.—Where these have been forced in the open, the heating material should be cleared away, leaving the pots or boxes over the crowns for a week; afterwards a little straw litter may be placed on the crowns. Daw's Champion Rhubarb, unforced, has been fit to pull for the past ten days.

General work.—Continuous rainfall has made it almost impossible to get upon the ground, and no time must be lost in bringing up arrears in the matter of planting and sowing as soon as it gets dry. Remove spent crops of Savoy, Coleworts, Broccoli, &c.; wheel manure on to the land, and dig all vacant plots. Examine Shallots and Tripoli Onions, and press the bulbs into the soil if loosened by frost.

THE FLOWER GARDEN.

By T. H. SLADE, Gardener to Lord Poltimore, Poltimore Park, Exeter.

Zinnias.—Sow seeds in pans of light soil, and place in gentle heat; and when the seedlings appear, do not push them on very fast, as being very tender plants they cannot be put out in the open borders until June.

Auriculas.—Seeds may now be sown in well drained pans or pots filled with sandy loam that has been afforded water previously. The seeds should be sown thinly, and the pans placed in a cold frame, and kept closely covered and dark till the seed has begun to germinate. Do not be impatient if the seedlings germinate slowly, for they will come in due time if the seed be good.

General Remarks.—Sow seeds of annuals in pots or boxes for the purpose of filling vacant spaces in the borders. Make a sowing of Sweet Peas, for unless the flowers are cut off regularly, the plants get exhausted and cease to flower. Stir the soil of the herbaceous border with a hoe whenever it becomes caked.

Bambusa, Phyllostachys and Arundinaria.—The next three or four weeks are very suitable for setting out these plants in the open ground. The best spots to select for them are those which are screened from the east and north-east, as nothing spoils their beauty sooner than cold winds, and even a full exposure to the west gives the plants a torn appearance and spoils their effectiveness. In most gardens there are sites where Bamboos may be planted, but the most suitable are the banks of streams, lakes, or similar moist situations, furnished with a background of dark foliage trees and shrubs. If the soil is of a light nature, a mulch of cowshed manure will be of benefit to them. In planting Bamboos out of pots, the roots should not be disturbed beyond what is needed to remove the crocks; but if an increase of the stock of plants is desired, several of the best plants should be divided, and cultivated in pots for a season. They will make good plants in a year if they are placed in a little warmth after repotting, and kept well supplied with moisture at the root. At the end of the summer they should be hardened off, planting them out the following April or May. They should be given plenty of space for development. The rhizomes of these plants soon run into the soil, throwing up new stems, and increasing the size of the clump. *Arundinaria japonica* (*Bambusa Mé-také*) is one which makes the strongest growth; *Arundinaria Simoni* throws up very tall stems, and is more graceful than *A. japonica*; *Phyllostachys aurea*, *P. mitis*, *P. viridi-glaucescens*, *P. nigra*, and *P. Castillonis* are excellent for general planting.

Eulalia japonica, *E. gracilima*, and *E. zebrina*.—April is a good month for dividing and replanting the stocks of these grasses. Afford it a good loamy soil in which to root, and *E. japonica* will

soon make a large plant. It is a useful plant for forming isolated clumps on the turf, or for mixing with other plants in large beds. *E. japonica* formed a very effective plant here last season among Cactus Dahlias, and when used in this manner, having an eye to a proper combination of colours, the violet-coloured panicles of flowers of the *Eulalia* are very attractive. In the colder parts of the country it may be advisable to lift the variegated forms of the plant and put the stools into pots, plunging these in coal-ashes in the open during the winter.

FRUITS UNDER GLASS.

By MALCOLM MCINTYRE, Gardener to Sir CHAS. TENNANT, The Glen, Innerleithen, Peeblesshire.

Vines.—In the earliest houses red-spider is almost sure to make its appearance, and no time should be lost in painting the return hot-water pipes with sulphur and milk, mixed so as to form a thin paste. Afford the inside borders a thoroughly good quantity of water, doing this early in the day, so that much of the moisture may pass into the soil before the house is closed. Early-forced Grapes occasionally fail to colour well, and almost invariably the cause of this is over-cropping or continued hard forcing. It can to a certain extent be avoided by affording a constant supply of dry, warm air and a low temperature at night. In houses where the Grapes are fully ripe the temperature should be reduced considerably, but a moderate degree of moisture should be maintained for the benefit of the foliage, and it will not do the Grapes any harm, provided that there is free ventilation. Let the temperature be 60°.

Succession-houses.—When Vines of most of the varieties generally cultivated produce no more bunches than they should perfect, there is something seriously wrong with them. As a general rule, every lateral growth on healthy young rods is furnished with two or three bunches, and the strongest growths on older rods are nearly as productive. In all such cases thinning out should commence as soon as it can be decided which bunches on each lateral will meet the requirements of the cultivator. The first bunch on the new shoot is invariably the stronger, and frequently the one that is left, although not always the better one. Long, ugly shoulders ought never to be left on the bunches, unless weight is the principal consideration. I never leave any shoulders on Lady Downes', as it makes a much more suitable bunch for dessert without them. It is advisable to reduce the number of bunches early, in some instances before they have flowered, or as soon as it can be seen which promise to be the best; the shy setters—namely Muscat of Alexandria, Muscat Hamburg, Black Morocco, and Alwrick Seedling—being finally thinned after it is seen which bunches are best furnished with well-stoned berries. Even the Muscats would be more likely to stone regularly if a moderate number of bunches only were left on the Vines at flowering-time.

Tying the Shoots.—It is a common practice to begin to tie down the shoots as soon as they are long enough to bend. This is not advisable, except as a precaution against frost, or when they are pushed against the glass, as the shoots at this stage are so tender that the slightest twist will break them. It is better to defer tying down until the shoots are less sappy; then carefully secure them into their places where they are to remain during the summer. This is an operation which requires much attention.

Thinning the Berries.—Much of this has already been done where moderately early forcing was resorted to; but where there are many bunches yet to be thinned, commence as soon as they are out of flower with the free-setting varieties, such as Black Hamburg, Gros Colman, Cooper's Black, Trebbiano, &c., following it up late and early and on dull days. The sooner the thinning is done in reason the more expeditious will be the process, and the better it will also be for the Vines. Those men who are acquainted with the capabilities of each Vine should be able to thin the berries so that the bunches will require little subsequent attention, and there certainly ought to be no necessity for removing berries after these are more than half-grown. The first thinning can be done cleanly and well, but subsequent attempts usually lead to the disfigurement of the berries. Great care should be taken not to rub against the

bunches with the hat or hair of the head, this and the use of dirty scissors being the cause of the berries lacking bloom.

Young Vines.—Those planted last year are breaking naturally, and ought to be assisted with gentle fire-heat during cold weather. The canes may now be tied in position, after having been fully depressed, so as to cause them to break regularly. Disbud, leaving the best shoots about 18 inches apart on both sides of the canes. Crop lightly, and on permanent Vines do not retain more than two bunches on a cane. Any extra Vines, planted to fruit early and to be afterwards cut out, may carry four or five bunches, or even more, on each, according to the vigour of the Vines.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HUSSEY PACKE, Esq., Prestwold Hall, Loughborough.

Humea elegans.—Strong plants may be repotted in 11-inch pots, and manure-water afforded them when the roots have filled in every part of the soil. The compost may consist of loam one-half, leaf-soil one-half, and charcoal and sand in sufficient quantity to afford porosity. Let the potting be done firmly, and afford plenty of space for holding water. Great care is required in applying water to Humeas after repotting, and it is better to incline to the dry side rather than afford much water before growth becomes active, and the roots have filled the soil. Let the plants be sponged occasionally, especially after hot days.

Pelargoniums.—The growing shoots of the early show and fancy varieties should be neatly tied to thin, green-painted stakes, keeping the plants open in the middle. Let the plants be still kept near to the glass to avert drawing. Manure-water may be afforded to plants showing flower, and syringing may be more frequently performed now that the weather has got warmer. Cuttings should be potted into their flowering pots, so as to form a succession to the earlier plants.

Cyclamens.—If any of these plants were potted in small 60's at the end of the month of January, and placed upon shelves close to the glass, and they are sturdy and strong, they may be shifted into large 60's; and from now onwards, they will be the better for being placed in a pit having a temperature of 55° to 60°. The pots should stand on a layer of coal ashes 2 inches thick. The potting compost may consist of loam two-thirds, leaf-soil one-third, with silver sand and finely-sifted charcoal and lime-rubble added. Pot firmly, and cover the corm about three-fourths of its diameter; syringe slightly twice a day, close early in the afternoon until the plants are established, and then afford air more freely, and gradually harden off in readiness for placing them in cold frames by the end of May.

Bouvardias.—The plants that were cut back after flowering may now be transferred to large 48's, and when growth recommences, constant attention should be paid to pinching the young shoots at the third joint. Place the repotted plants in a frame having a warmth of 55° to 60°; syringe them daily, and ventilate the frames in favourable weather. Rooted cuttings may be potted, placing three in a large 60 so as to form large masses in a short space of time, shifting into larger pots as required until they come into large 48's, a size sufficiently large in which to flower them. The larger plants will require as a final shift, 10-inch pots. Sandy turfy-loam, leaf-soil, and sand, make a suitable compost for Bouvardias.

Mignonette.—Thin out the seedlings to one or two good plants per pot, and shift into 48's, making use of strong loam $\frac{2}{3}$, leaf-soil $\frac{1}{3}$, dried cow-dung rubbed through an $\frac{1}{2}$ -inch meshed sieve, and lime-rubble beaten small. In repotting, pot firmly, keep the plants in a pit having a warmth of 50°; and nip off the flower spikes as they appear, and afford weak liquid-manure occasionally after the pots are filled with roots. The final potting into 24's should be afforded during June.

East Lothian Stocks.—For autumn flowering sow in pots, and thin the seedlings to three in a pot; repot, and finally shift into 24's—the flowering size. Place the plants in a well-ventilated frame, and remove the lights at night when there is no danger from frost. As a potting soil, make use of turfy-loam $\frac{2}{3}$, leaf-soil $\frac{1}{3}$, with some well-decayed manure, lime-rubble, and river sand. Manure may be afforded twice a week after the flower-spikes have appeared.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, APRIL 23	St. George's Day. Royal Horticultural Society's Committee Meet, and General Meeting of Fellows.
WEDNESDAY, APRIL 24	Royal Horticultural Society's Examinations.
THURSDAY, APRIL 25	Norfolk and Norwich Horticultural Society's Exhibition. Société Nationale d'Horticulture de France (Orchid Show). Midland Daffodil Society's Show, at Edgbaston Botanic Gardens, Birmingham (2 days). National Auricula Society (Midland Section), at Birmingham.

SALES.

MONDAY NEXT.—Roses, Ferns, Begonias, Gladiolus, Perennials, &c., at Protheroe & Morris' Rooms.

WEDNESDAY NEXT.—Standard and other Roses, Ferns, Azaleas, Hardy Perennials, Flowering Shrubs and Plants at Messrs. Pollexfen & Morrison's Rooms, 6½, Pilgrim Street, London, E.C.—Roses, Begonias, Carnations, Azaleas, Palms, Border Plants, Arancarias, &c., at Protheroe & Morris' Rooms.—The Celebrated Walton Grange collection of Orchids, by order of W. Thompson, Esq., at Walton Grange, Stone, Staffs, by Protheroe & Morris.—Orchids, Palms, American Fruits, Carnations, Pinks, Hardy Shrubs, &c., at Stevens' Rooms, 38, King Street, Covent Garden, at 12.30.

THURSDAY NEXT.—The Celebrated Walton Grange collection of Orchids, by order of W. Thompson, Esq., Walton Grange, Stone, Staffs, by Protheroe & Morris.

FRIDAY NEXT.—Imported and Established Orchids, Cypripedium Charlesworthi, Orchids in flower and bud, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick—49°5'.

ACTUAL TEMPERATURES:—

LONDON.—April 17 (6 P.M.): Max. 55°; Min. 38°.

April 18 (11 A.M.):—Fine, warmer.

PROVINCES.—April 17 (6 P.M.): Max. 50°, East Counties; Min., 42°, N.E. Scotland.

THE somewhat sluggish imagination of our countrymen must have been stimulated by the manner in which our colonial kinsfolk have of late espoused the cause of the old country when they were not actually obliged to do so, and when the opinion of foreign nations in general was decidedly adverse to our policy. The moral support of our colonies was therefore even more satisfactory than their willingness to take part in the struggle in which the nation has been engaged. How deeply felt, and how widely diffused is the attachment to the old country and its lamented Queen was also strikingly illustrated by the native races subjected to her sway, as well as by Britons born. The journey of the Duke and Duchess of CORNWALL AND YORK from colony to colony affords another opportunity of consolidating the good feeling. Each place visited seems determined, so far as circumstances will allow, to outvie every other in the cordiality and splendour of their reception.

Among the places visited will be, in most cases, the several botanic gardens. We are, therefore, pleased to be able to give in the present number an illustration from the lovely gardens at Peradeniya (fig. 97), in supplement to several that we have previously given.

Under the zealous management of Mr. WILLIS

the beauties of the garden, of which Mr. H. F. MACMILLAN is Curator, are to be supplemented by the establishment, or by the extension of laboratories, libraries, and museums, so as to facilitate scientific research, and foster the application of scientific knowledge to practical ends.

From this point of view, the appointment of Mr. J. B. CARRUTHERS, the son of the late head of the botanical department of the British Museum, is most important. A vegetable pathologist—shall we call him a plant doctor?—is essential in such a colony, and we cannot doubt that his labours will prove of vast benefit to the planters. It is pleasing to find an effort being made in Ceylon to emulate the success which the Dutch Government, under the auspices of Dr. TREUB, has secured for the gardens at Buitenzorg in Java.

We have allowed our Dutch friends to get a little ahead of us in scientific matters, but there is no reason why Ceylon should not rival Java, and offer equal attractions to scientific workers from Europe. In the meantime, the world of science is under a deep obligation to Dr. TREUB and his staff for the ready courtesy and help they give to students of all nationalities.

The following letter from our correspondent at Peradeniya, where the Duke and Duchess spent the greater part of the afternoon on Sunday last, is very interesting, and shows that considerable efforts were made to make the Royal visit to Ceylon as pleasurable as possible:

"Our chief excitement here now is in the preparations to celebrate next month the visit of the Duke and Duchess of York, on their way to open the Federal Parliament in Australia. They will stay in Ceylon for four or five days, and are going to be entertained quite royally. The chief item of the entertainment will be the night procession of natives, scores of richly-caparisoned and huge elephants, of grotesque and repulsive-looking "devil-dancers," who "dance" all along the route, and of native musicians who certainly do play (not music), as well as drum-beaters. The din is awful, and no less the odour from the thousands of scantily-clad individuals who form the crowd. Of course, we have usually to look on from a balcony or verandah, which all European houses here possess. The Royal visitors are to have tea in these gardens in a specially-constructed pavilion. They will be asked to plant a tree, and a whole host of elephants are going to "drill" and bathe in the large river which surrounds the garden for the Royal enjoyment."

We since learn that the entire route from Kandy was decorated with an oriental hedge on both sides, formed of small arches of split Bamboos and Cocoa-nuts. The tree alluded to in the above letter was a Cannon Ball-tree (*Couroupita guianensis*), a native of tropical America, and belonging to the natural order Myrtaceæ. It was planted by the Duke in a central circle opposite a tree planted by the King in 1875. After tea there were brought ten elephants to bathe in the river, and it is reported that one of these uprooted the tree planted by the Duke! The capers of the elephants were witnessed by a large crowd of natives clad in red and white, who made a charming picture against the vivid green background of Palms and other leafy trees. On the previous day (Saturday) the Duke was presented with a cluster of King Cocoa-nuts, and a Jak (*Artocarpus integrifolia*), a green, Melon-shaped fruit, both of which had been grown on trees planted by the King in 1875, at the old fort of Hongwella, about a hundred miles from Kandy. On Saturday, also, the Duke received a presentation from the Ceylon Planters' Association.

The Proposed
New Garden of
the Royal
Horticultural
Society.

THE thanks of the Society are due to the Council for the fulfilment of their promise with regard to the selection of a site for the garden which it is proposed should replace Chiswick. Having accomplished their task, we can hardly suppose that the Council, as a body of business men whose devotion to the interests of the Society is beyond question, will now be particularly anxious to proceed any further in the matter at present.

Those gentlemen who have accepted the invitation to visit the site proposed at the time when these pages are passing through the press, will find themselves, after a journey of an hour and more, at Farningham Road Station—a chalk district, overlain in places by loam and tertiary sands. From the station, under ordinary circumstances, there will be upwards of a mile to walk. Arrived at the selected spot, the site will be found to be an open Kentish down, without shade, without shelter, destitute of trees, without a house, a cottage, or even a shed—with no walls, but with hedges of no sufficient height to afford protection from the wind, and a small copse at one side. The soil is good, and water can be obtained. The Darent runs at no great distance, so that the drainage is sufficient.

The defects that we have pointed out could be remedied in time, and no doubt, given sufficient money, energy, and time, a garden of an interesting and valuable character could be formed. But where is the money to eventually come from? It is certain that the finances of the Society are quite inadequate for the purpose. The land has to be purchased. It has to be prepared for its future use. Everything, as we have said, has to be done, and the expense in doing it would be enormous. Chiswick would have to be dismantled, its houses taken down, new ones erected at South Darent, besides an office, residences for the superintendent and his staff, accommodation for the students and for workmen, and for such visitors as might be induced to visit the garden.

If Government aid could be looked for, or if some wealthy Fellow is prepared to become a benefactor to the extent of fifty thousand pounds—a hundred thousand pounds would be better—we should hail the scheme with pleasure. If the small capital in the possession of the Society, supplemented by the donations of Fellows, is to be increased by means of a large loan, then we contemplate with dread the prospect of plunging the Society once more into the slough of debt, difficulty, and disaster.

Shall we be justified in incurring so much risk for the sake of forming a garden which will be practically inaccessible to the large majority of the Fellows? We think not. Chiswick, which is, of course, far more accessible, is only occasionally visited by the members of the Committees who have business there. The Fellows generally are conspicuous by their absence, or are represented only by the nursemaids and children belonging to such of them as are resident in the neighbourhood.

Considerations such as these will, we doubt not, weigh with the meeting, and save the Society from destruction. If the object be, as we were told, the fitting celebration of the approaching Centenary, then the means to be adopted for that purpose will be facilitated by the elimination of at least one most dangerous proposal.

In another column we publish extracts from letters received on the subject; and if it be objected that very few of them are in favour of the projected scheme, we may say that we should gladly have inserted any other communication had it reached us.

We have reason to believe also that the

scheme meets with the strong disapproval of Sir W. T. THISELTON-DYER, Mr. ELWES, Sir MICHAEL FOSTER, Sir HENRY SCHRODER, and others well acquainted with the working of the Society, and who took a prominent part in its resuscitation.

therefore visited the site on Monday last. This was done with a view to furnishing precise information to such of our readers who may not have an opportunity to see the ground themselves before they are required to vote upon the proposition to purchase it. His statements do not affect the

ham Road Station at 11 o'clock, not very far travelling, seeing the distance is but 20½ miles, but the train was only three minutes later than the scheduled time. There were no conveyances at this station. Our representative at once proceeded on foot to the Home for Little Boys at South Farning-



FIG. 97.—VIEW IN THE BOTANIC GARDENS, PERADENIYA, CEYLON.
(VISITED BY T.R.H. THE DUKE AND DUCHESS OF CORNWALL AND YORK ON SUNDAY LAST.)

THE FARNINGHAM SITE VISITED.—The visit to Farningham to inspect the ground proposed to be purchased by the Royal Horticultural Society was made on a day when it was impossible for us to attend, and was too late for us to give any report in this issue; a representative of the *Gard. Chron.*

general question in the least; that is, whether or not it is desirable for the Society to acquire land anywhere whilst in its present condition.

Our representative left Victoria Station at 10 o'clock A.M., by the same train the party travelled by on Thursday. He arrived at Farning-

ham, the distance being about 1½ miles. One-third of the road from the station declines to a point known as Darenth Vale, where the Horton Kirby Paper Mills are situate, and which is very much below the level of the railway line. From the paper works, the rest of

the distance is a steep incline to the railway bridge which spans the line. The Boys' Home consists of ten houses enclosed in private grounds, each house accommodating thirty-four persons, and an additional one is tenanted by apprentices who have been in the other homes. The 48 acres of land the Society is interested in, is divided from the Boys' Home by a large field on the further side along the Fawkham Road, and is upon the same side of the roadway. The land at present belongs to a Mr. HASSALL, who also farms it; all of it has been ploughed, and some is sown with Wheat, some with Sainfoin, and the rest is not sown. It is situated on a considerable hill, nearly but not quite at the summit, and is nearly 250 ft. above the sea-level. The general slope of the ground is from the south-east (not the reverse as stated by a contemporary), but there are minor falls from the north and west. There are no trees, buildings, or other features that shade the ground, and consequently there is no shelter, except a very little on the south-west. The south-west gale that blew at the time of our representative's visit, seemed to indicate that some considerable expense would be necessary to provide fencing and shelter. It may also be stated here from inquiries made of the residents in the district, including Mr. H. CANNELL, of Swanley, that it would not only be necessary to erect a residence for the superintendent, but the dearth of workmen's houses is such that the Society would be unable to obtain the labour necessary for the formation and maintenance of the garden, unless it built a number of workmen's cottages. The initial expense thus suggested is so great that it may well cause the Society some reflection. Mr. Cannell has a very intimate knowledge of the neighbourhood, and showed our representative several sites he considered to be preferable to that recommended by the Council.

The ground, from another point of view, has a decided advantage over the site at Limsfield which was under consideration last year. From its elevated position, and from the fact that the subsoil is chalk, the ground at Farningham is provided with excellent natural drainage, and no outlay for this purpose would be required. Generally there is a depth of 2 or 3 feet of good loam over the chalk, and between the two there is a rather thin layer of gravel. The loam itself contains a large number of stones, but this has no particular disadvantage, and it is partly owing to this fact that during periods of drought crops upon this land have not suffered to an uncommon degree. The soil may be easily worked, and after much rain a single fine day is sufficient to bring it into condition for the purpose. It will be seen, therefore, that compared with the site at Limsfield, this one is much more accessible, being little more than half the distance from the station. The soil is better, and there would be no outlay for drainage, but this fact is partly counterbalanced by the need there exists for fencing and shelter.

The railway siding that has been mentioned in a contemporary, is only a narrow strip of ground for the purpose of boys travelling to the Home from London alighting near to the establishment. There are no additional metals, and it is difficult to see how it could be made useful for goods, as the train would have to stand on the main line whilst disloading. There is no such facility on the "up" line at this point, and even the boys when journeying to London have to proceed to the Farningham Road Station.

The approach to the site through Darenth Vale is distinctly bad, and the paper mills already referred to and others in the district have a prejudicial effect in several respects. The one most noticeable at the time of our representative's visit was that of an abominable stench they emitted, and which was noticeable nearly a mile distant.

There are no facilities for visitors to obtain refreshments. We have already said that the distance from London is but twenty and a quarter miles, but it must be remembered that the district is served by the London, Chatham & Dover Railway

Company, and that the journey generally occupies one hour or more. On the return journey to town the train was twenty minutes late in starting from Swanley Junction, where our representative joined it, and it was owing to the reputation this company has gained for surprises of that kind, that a passenger on the outward journey remarked to our representative, "You can easily spoil a day for two shillings on this line." The system is certainly capable of improvement.

The Opinions of Our Correspondents.

BUCKLEBURY PLACE, WOOLHAMPTON, BERKS,
April 12, 1901.

Sir,—The notice given in your current number calling a Special general meeting of the Fellows of the Royal Horticultural Society for April 23, to consider, and if approved, adopt the proposal of the Council to purchase land on behalf of the Society for the purpose of its new gardens, brings the Fellows face to face with one of the most important issues in the history of the Society, upon which, with your permission, I should like to offer a few comments.

In the first place, it will be seen that whereas in the annual report, the adoption of which was proposed by the President on February 13, 1900, the Council recommended the purchase of a site (Limsfield), as the most suitable means of celebrating the Centenary of the Society, in the present notice no reference is made to the centenary, the Council merely proposing to purchase 48 acres of land at South Darenth "for the purpose of its new gardens." It is most important, therefore, to ascertain whether the Council still consider the formation of new gardens to be the best means of celebrating the centenary, and whether the Fellows are also of the same opinion.

If the site now recommended by the Council prove to be a suitable one for the formation of a garden, which shall in all respects be worthy of the Society, and where gardening in all its branches can be carried out in the highest possible degree of perfection, and if the Council are assured that they already possess, or can raise, not only sufficient capital to furnish and equip such a garden suitably, but to maintain it at the annual cost which would be necessary, no doubt at least treble that which Chiswick now costs (about £1,400 per annum), there may be no special reason why the scheme should not be carried out, if the Fellows generally consider this to be the best means of celebrating the centenary.

But whatever the feeling of the Council and Fellows may have been fourteen months ago, there can be little doubt that only a small minority of the Fellows now consider the formation of such a garden to be the best means of commemorating the Centenary of the Society. My reasons for so thinking are:—

(1). We have constantly been reminded that the Society was formed with the distinct object and purpose of "promoting horticulture," and the Fellows have to decide whether a garden in the south of England, over 20 miles from London, however well appointed and managed, is the best means at their disposal for promoting the horticulture of Great Britain. It is true that with an ideal garden, where the best methods of forcing fruit, flowers, and vegetables of all kinds are carried out, in addition to outdoor operations, a certain number of students might be trained to become efficient gardeners; but it is at least open to question whether such a training would be superior or even equal to that which the same class of students can already obtain in the first-class private establishments of the country. It is important, moreover, to know whether the gardens, if once formed, would be utilised principally by those aspiring to become *bond fide* gardeners, or whether they would principally form a training-ground for the comparatively few men who are required to assist the neighbouring county councils in providing courses of lectures during the winter months.

In the case of the Limsfield site, there was certainly an idea that the gardens might be quite as valuable to the county councils as to the Fellows of the Society itself. However this may be, we have to compare the possible influence upon horticulture which such a garden might have, visited as it would be annually by scarcely one in 300 Fellows, with the very definite impetus to horticulture of every description, which the opening of a suitable horticultural building in London would afford. It

is quite true that Fellows living at great distances from the metropolis are not often able to attend the exhibitions, but this objection applies with far greater force to a garden some 20 miles to the south of London. In proportion as facilities are given for exhibiting such high-class products of horticulture as are seen at the Drill Hall, so would the horticulture of Great Britain be distinctly promoted and advanced.

(2). Because the mere idea of celebrating the Centenary by the formation of a new garden is considered and carefully examined, the more evident has it become that only an extremely small proportion of the Fellows generally would benefit in any degree whatever by such a garden, apart from the interest which might attach to reports of experiments published in the *Journal*. Such reports would, of course, possess [a] certain value, but this would depend entirely upon the experimental work attempted and carried out in the new garden. From the work done at Chiswick during the last twenty years, we must not, however, be too sanguine as to the result of similar operations elsewhere. It is not unreasonable to ask that in proposing the best means of celebrating the Centenary the council should make it perfectly clear that the interests of the greatest possible number of Fellows will be considered.

(3). Because during the last fourteen months the Fellows have had further opportunities of carefully considering the financial aspect of the question, and very many—I believe a great majority—are not prepared to sanction so great an annual expenditure as would be necessary to maintain in a state of proper efficiency any gardens worthy of our national horticultural society, without evidence that the Society has the means at its disposal. It may quite reasonably be supposed that the annual cost would be £4000, or at least three times that of Chiswick.

Whatever scheme is ultimately decided upon as the best for celebrating the Centenary of the Royal Horticultural Society, a large sum of money must be raised, and therefore it would obviously be desirable that the scheme be one which will commend itself to the greatest possible number of Fellows, and I venture to think that the establishment of a permanent home for the Society, with a suitable hall for exhibition purposes, committee-rooms for the various committees, whose work is so important to the Society, and which is at present carried out with so many discomforts; and also a Lecture Hall for the fortnightly lectures, and in which the Lindley Library might be housed, is one which would have the hearty sympathy of an immense majority of the Fellows. The sum of money now annually spent on Chiswick would be more than sufficient to pay the interest on any loan that might be required for the acquisition of the necessary site and cost of building. *Arthur W. Sutton.*

P.S.—Since writing the above letter I have, by the courtesy of Mr. Wilks, had an opportunity of visiting and examining the proposed site near Farningham Road, in company with Mr. Wright, the Superintendent of the Chiswick Gardens.

There is no doubt that, so far as the soil is concerned, and the approach to the site, it is decidedly preferable to that at Limsfield. Water and manure, too, are easily obtainable. This is, however, almost all that can be said in its favour. The best trains take an hour to cover the twenty miles from London, after which there is a walk of about half-an-hour, and very little, if any, opportunity of getting such refreshments as Fellows who spent a day or half-a-day in the Gardens, would need. The site is a very open one, and as there are no trees upon it, there is, of course, no shelter, except on the south-west side; neither do buildings of any kind at present exist there. At the same time, as the soil is undoubtedly good, there would be no insuperable difficulty in forming the garden if a great majority of the Fellows wished to celebrate the Centenary in such a manner, and at such a distance from London.

It seems strange that it should not be possible to obtain 15 to 20 acres in the Feltham neighbourhood, or other districts where market-gardeners, seedsmen, and nurserymen, have already found the soil and situation suitable for horticultural operations. The cost per acre would undoubtedly be greater, but then a much smaller area than 48 acres would suffice for all the necessary purposes of a garden. *A. W. S.*

— It is thus very evident that the Council has at last made up its mind to deal with the most important subject of a new Chiswick, and none too

soon. We can but hope that the Fellows will also make up their minds, and give the Council the fullest support. The time has come when a matter of such supreme importance to the Society can no longer be dallied with. It is understood that the much-discussed Limpsfield site is still available, but this new Kentish one is much cheaper. It is some 20 miles from London, but it is useless to look for a site at all moderately priced nearer. *The Garden*, April 13.

— Permit a northern fellow of the Society to express his thanks to you for your bold stand against the proposal to have a new garden for the Society at this time—a proposal which will inevitably lead to the indefinite postponement, if not abandonment of the project of a new hall for the meetings. Like many others, I feel that an experimental garden in Kent is worthless for testing plants for the country as a whole, while the fortnightly meetings are of the greatest value, even to those who have seldom an opportunity of visiting them, but who have to content themselves with a view of them through the gardening press. No doubt we all feel disinclined to have to criticise any proposal which comes from a body which has done so much to promote the interests of the Society, and to give its members a real interest in its work, but we shall fail in our duty if we do not express our views in a temperate way. I know that there are many country fellows who share this opinion, to which you have given expression, and for which we owe you our thanks. *A Northern Fellow*.

— Mr. H. H. RASCHEN (Sidcup), in a letter too long to be published in its entirety, considers that our observations accurately reflect what he thinks is the prevailing opinion of the Fellows. He thinks that the Council should, with the assistance of a Committee of the Fellows, discuss the question of sites for the proposed new garden, and specially should approach the government for the purpose of securing a site in the Green Park for the erection of a horticultural hall under certain conditions. Mr. RASCHEN points out that the government has granted a similar concession in the Regent's Park, to a society which has far less claims upon the public than has the Royal Horticultural Society.

— Many, I feel sure, will feel thankful to you for your very able article on the Royal Horticultural craze for a new garden. If it is necessary to have more land for the trial of seeds, &c., why cannot the Society do as many of the large seed houses and nurseries do, namely, hire or rent land for that purpose? Then it should be accessible, and not too far from London and Chiswick—say in Surrey, not far from Mitcham Junction, Hackbridge, Sutton, or Cheam, where there is land and farms to let which have no flints or clay, and are accessible from London Bridge, Ludgate Hill, and Victoria stations, also from Clapham Junction, Chiswick, Wimbledon, and Croydon. Take time to find the right place in point of accessibility and fertility of soil, and keep out of debt. I am one who has not forgotten the difficulties of Kensington. *J. Peed, Streatham, Surrey*.

— The announcement in the *Gard. Chron.* last week, that the Council of the above Society have selected another site for a new garden which they propose to take, will come as an extremely unpleasant surprise to a large number of Fellows after the definite assurance [that nothing should be done without consulting the Fellows. Ed.] given by the President at the last annual meeting. To those who are not of the governing body, it must look very much like a repetition of the rushing policy adopted last year. It was certainly understood by those present at the annual meeting in February, that an ample opportunity was to be afforded for the fullest discussion of the whole subject, before steps were taken in any direction. Now we hear that a meeting is called for the only purpose of accepting or rejecting a proposal, concerning which the Fellows have had no information. It involves, however, the important question in dispute, i.e., whether the Council is justified in incurring the great financial risks of such an undertaking, when there is no immediate necessity for it, and when also a much greater need already exists for better accommodation at the Committee meetings. The notice sent to the horticultural press allows but one week in which the bearings of the case can be discussed, and in one direction it is announced that "if the Royal Horticultural Society does not purchase the site, it will come under the hammer in May," from which it is evident that no

time will be allowed to consider the matter as thoroughly as it demands.

Certain statements will no doubt be made at the meeting on the 23rd inst., and the Fellows will be expected to accept them, and to empower the Council to proceed in this headlong manner to carry out an exceedingly difficult and serious enterprise. When the Council has had abundant evidence that a large number of influential Fellows are strongly opposed to such a policy, it is surprising and deplorable that they should persist in a course that must end in the alienation of many good friends. All who are convinced that the proposed action is opposed to the best interests of the Society should attend the meeting on the 23rd, accord the Council's statements what consideration is possible at such a meeting, and unless the reasons advanced are of a more weighty character than any hitherto brought forward, the proposals should be definitely rejected, or at least postponed for further discussion. In the interest of the Society, and of the great industry which it should adequately represent, it is to be hoped that the meeting on the 23rd inst. will not authorise a hazardous, and possibly a ruinous scheme, simply because it is so persistently urged by a Council and officers who are appointed solely to carry out the wishes of the Fellows. *F.R.H.S., Midlands*.

— As a Fellow of this Society, I was, as I am quite sure were many others, very pleased to see that in the *Gardeners' Chronicle*, p. 236, you treat the question of the proposed new garden with due caution, and advise the careful deliberation such a radical departure deserves to obtain. I must say that I think the Council are too precipitate; there are feverish symptoms, recurring in such a sudden and intermittent way, that it certainly looks as if some one was in a particular hurry about the matter. The Council may be unanimous in their desire for the proposed new garden, but the Fellows are divided, some thinking, as I do myself, that a new exhibition hall and offices are really more essential, and that such would tend very much more to the efficiency and usefulness of the Society, especially as the old garden at Chiswick has got nearly twenty years to run before the lease expires.

It seems to me, that unless the Fellows of the Society are on the alert on St. George's Day, April 23, there will be an attempt to rush this question, before the mass of the Fellows have time to really apprehend the overwhelming importance of the new departure thus again suddenly brought before them. The undignified haste of the Council is hard to understand, and every precaution should be adopted to prevent this most important question being decided prematurely.

Every Fellow of the Society should receive full official notice and information as to the ways and means by which the Council propose to acquire and maintain the new garden, and what they propose to do with the present Chiswick garden. It is the duty of the Council to afford this essential information, and it will then, and then only, be possible for any or for every Fellow to vote with all the facts before him. In any case, supposing the new garden is secured by the Council, they will still have a large and influential minority to deal with in the matter.

I fully agree with your editorial, viz., that "the feeling of a large number of the Fellows . . . is, that however desirable a new garden may be, the acquisition of a proper meeting-place is more immediately desirable, and that the energies of the Council would be better directed towards the fulfilment of this aim." I know that I am not alone in feeling that the Council have all along shown a marked disregard to the wishes and feelings of the Fellows generally as to the proposed new garden, and one can only hope that such signal expressions of want of confidence in the Fellows generally may not be reciprocated. In any case, the hurriedly-arranged meeting of the 23rd ought to be treated as merely a preliminary one, at which all necessary information as to cost, or rental, and costs of making and keeping the new garden only should be received, the meeting afterwards to stand adjourned for due consideration, before any direct conclusion or decision is made, in such an important and risky venture as a new garden is likely to be. *F. W. Burbidge, F.R.H.S., Dublin*.

— It was distinctly made clear during the discussion which took place last year at meetings of the Royal Horticultural Society, that, were the Limpsfield site purchased and made into the Society's gardens, that very generous grants or

subvention would be given to the Society by the Surrey County Council. Not ostensibly as such, but in the form of fees for pupils at the proposed Horticultural College adjoining the site, using the gardens for acquiring practical instruction. Whatever may have been the merits of that proposal, and it was one of considerable primary importance, it seems certain that no such pecuniary assistance can or will be furnished in relation to the proposed Kentish site. Naturally it will be asked, does the Kent County Council make any pecuniary offer. *A Fellow, Surrey*.

— Provided the Society has the necessary funds, and that the Fellows have absolutely made up their minds to abandon Chiswick, I see no reason why the Society should not purchase land at Farningham, or at any other suitable place, if such land be in every respect suitable for horticultural purposes, in such particulars, for instance, as aspect, soil, drainage, and shelter. If the situation at Farningham has not already some natural shelter, and shelter by planting has to be provided, then the 48 acres proposed to buy is not too much. I should rather the area have been 148 or even 248 acres. With such space shelters could be planted without crippling the field for the horticultural experiments, which, we may presume, will be carried out in a comprehensive and scientific manner in the new gardens. Having purchased more land than would be required to begin with, some might be let, and portions of it taken in hand as required. I would rather the new garden were north of the Thames, and if the matter comes to a vote of the Fellows, I shall certainly give my vote in favour of a northern position. I may also add that although I believe a new garden to be absolutely necessary, yet I think of two things a new exhibition hall is the greater want of the two. *W. Miller, Berkswell, April 15, 1901*.

— I have read every letter in the *Gardeners' Chronicle* concerning this subject. I lived at Hammersmith eight years with the late Mr. J. T. Peacock, of Sudbury House, and previously was at Kew, I therefore know the old Gardens well, and the great interest that Mr. Peacock took in the Society and its work; and I also know something of the tribulations of a gardener whose work lies amidst densely populated surroundings. How impossible it is to bring plants to the perfection either under glass or out-of-doors, as compared with what can be done in the country. I cannot but think that looking at the surroundings at Chiswick, and the great increase of buildings this last few years, and how all the old market gardens have been swallowed up by them, that it seems a natural fate that Chiswick should go also. I can only picture in my mind's eye what will occur twenty years hence, when Chiswick will probably be something like Hammersmith, and as densely populated. I say, by all means secure a site now at once, as time will undoubtedly increase the difficulty of finding a suitable spot near town. I remember the opposition and the difficulty that were found when the Hadley Common, or what was known better as the Essex Wastes scheme was thought about, for forming the Salvation Army's Farm Colony. A wind-swept stretch of land on which many said that failure was written. But consider the marvellous results that have been achieved there by the brains of one or two earnest men put into the work. What might we not expect from the resources at the command of the Royal Horticultural Society. When Mr. T. Chaplin privately visited the Essex Farm, and saw what had been accomplished there before he left that afternoon, he said "I am greatly pleased by what I have seen; I am amazed to find that so much has been accomplished here, and that we have done nothing to help you." *William Gostling, Bourne-mouth*.

— Last summer the scene selected by the Council of the Royal Horticultural Society to take the place of Chiswick was Limpsfield, Surrey; now, in the year 1901, the scene is shifted from the (at the time) highly-praised Limpsfield to Rabbit's Farm, adjoining the "Little Boys' Home," at South Darenth, in Kent. The nearest railway station is Farningham Road, and which station Fellows and horticulturists generally wishing to inspect the new Chiswick camping-ground, will reach, according to *Brashaw*, in one hour from Victoria (L.C. & D. Railway), the return fares being 6s. 2d., 4s. 4d., and 3s. 5d. respectively. These items, trifling as they may in themselves appear, are

worthy of consideration on the part of Fellows and the gardening community generally who may be disposed to visit the new Chiswick from time to time in search of practical information or otherwise. It certainly seems strange that the Council of the Royal Horticultural Society did not take the Fellows (who are the backbone of the Society) into its confidence regarding the Society's proposed change of site. At a notice of ten days the Fellows are asked to attend a meeting, and approve or otherwise a scheme of which they have not had any previous particulars laid before them. This looks like an inclination to "rush" scheme No. 2, in order to save it from the fate of No. 1—a fate to which all well-wishers of the Royal Horticultural Society sincerely hope awaits the Rabbit's Farm site. As pointed out in your leader (p. 236), there is no immediate, if any, hurry to plunge the Society into financial embarrassments by the purchasing the site for a new Chiswick, seeing that the lease of the old gardens has nearly twenty years to run; but instead the Society should endeavour to acquire a suitable site in London for the erection of a proper horticultural hall, a hall in which trade and private exhibits could be shown and seen to advantage, and in which several exhibitions of collections of choice fruits, &c., could be held during the London season. Such a hall would bring in a good revenue to the Royal Horticultural Society, and at the same time testify to future generations of horticulturists the good work that has been done by the Royal Horticultural Society in the year 1901; and recording the fact in letters of gold that this hall was erected in memoriam of the wisdom displayed by the Council of the Royal Horticultural Society in abandoning injudiciously-selected sites in Surrey and Kent for the formation of a new Chiswick. In conclusion, I may be permitted to remark that everything that has been done in recent years, and is still being done, to promote the love and science of horticulture, has been done by trade and private growers in sending fortnightly contributions of their choicest plants, &c., to the Drill Hall, where, so far as space and other matters permit, they are staged to advantage. It is true, only a comparatively small number of people have an opportunity of seeing the exhibits, but the descriptions given of the exhibits in the horticultural press are seen and read by most gardeners and amateurs, as well as the owners of large gardens, and in this way the good done by the Royal Horticultural Society's exhibitions at the Drill Hall is far reaching. But it would be of far more good were the exhibits staged in a suitable hall. *W., Essex.*

— I know the site, and I fear the approaches are such that every Fellow would object to, it is so unlike our fair county; and the paper-making factory, and its huge chimneys would be objectionable. I have long had in my eye several sites I think decidedly better than I should be pleased to point out to the Council if they would care to see, and they are in the same neighbourhood, but further south, and in my opinion would be a better selection, and the land I feel sure can be bought even cheaper than that at Rabbit's. From the importance of such gardens they should be far from the likelihood of the future erection of buildings, and should have a pure country approach, and nicely wooded surroundings. I have had the experience of making new nursery grounds in this neighbourhood, and from the knowledge of the cost and labour involved, I know it is a serious undertaking. However, my object now is solely to aid the Council in the selection of a site that will be the most likely to bring success. The only suitable hotel or public-house for respectable visitors, and for refreshments, is "The Lion," Farningham. This is very nice and neat, about 2 or 3 miles away; and an omnibus calls at Farningham Road Station two or three times a day. *H. Cannell, Swanley.*

VIEW IN THE GARDEN OF LUDWIG MOND (see Supplementary Illustration).—There are still a few good gardens left in the less remote suburbs of the Metropolis, of which Holland House, Kensington; Caen Wood and Holly Lodge, Highgate; South Villa, Regent's Park; Regent's Park Botanic Gardens, and the Zoological Gardens are among the more notable examples. In all of these, exotic plants fill the glass-houses and conservatories; excellent fruit is obtained both indoors and out of doors, and the majority of shrubs and trees (excepting perhaps some species of Conifers), herbaceous,

perennial, and tender bedding-plants succeed admirably. This is the more remarkable in view of the alleged failure attending gardening operations in the Royal Horticultural Society's gardens at Chiswick—a suburb further removed from the heart of London than almost any of those named, and consequently situated in a less smoke-obscured locality. Our illustration shows numbers of old and young timber-trees, in perfect health; a large expanse of level lawn, and beds and borders of Dahlias and other decorative subjects, apparently in the most vigorous health. Mr. Mond's residence and garden are situated in Avenue Road, St. John's Wood, and here his gardener, Mr. J. O. CLARKE, cultivates flowers and maintains in good health a considerable collection of Orchids—of which a short account appeared in our issue for Nov. 17, 1900.

ROYAL HORTICULTURAL SOCIETY.—The next fruit and flower show of the Royal Horticultural Society will be held on Tuesday, April 23, in the Drill Hall, Buckingham Gate, Westminster. The National Auricula and Primula Society will hold its annual show at the same time and place.

— **EXAMINATION IN HORTICULTURE.**—The Royal Horticultural Society's Examination in Horticulture will take place on Wednesday, April 24, at various centres throughout Great Britain. Intending candidates are requested to forward their entries at once to the Secretary, R.H.S., 117, Victoria Street, London, S.W.

— At a general meeting of the Royal Horticultural Society held on Tuesday, April 9, forty new Fellows were elected, making 288 elected since the beginning of the present year, amongst them being Lady ANSTRUTHER, Lady HUNTER, Major-General Sir FRANCIS GRENFELL, K.C.M.G., Colonel SPRAGGE, D.S.O., and SAMUEL G. BUXTON, J.P.

ROYAL BOTANIC GARDENS, CEYLON—ADMINISTRATION REPORTS, 1900.—We learn from this very detailed document that:—

"The past year has been marked by a considerable increase in the sphere of activity of the Department, which enters upon the new century with an increased scientific staff and equipment, under the direction of Mr. J. C. WILLIS, with Mr. J. B. CARRUTHERS as Assistant Director. . . . The Botanist and the recently appointed Chemist, Mr. BAMBER, have devoted much attention during the year to camphor, which seems, owing to the action of the Government of Japan, likely to prove worth cultivation in Ceylon. . . . The library has been much improved during the year. The new laboratory was completed and handed over by the Public Works Department in February, but there was a considerable delay in the completion of the furniture, and it was not till the end of the year that it was really ready for work. The equipment of the laboratory with apparatus will be gradual, but it already contains a good supply of all the ordinary utensils, chemicals, &c., required for scientific work. Since its completion the building has been largely used, and has proved very convenient and well arranged in most respects. A number of botanists from abroad are now working here, and a noteworthy and gratifying feature is the large number of visitors who have been sent officially by various Governments during the year to study the organisation and working of the Department. The Mycologist and Entomologist have carried out a great deal of work during the year, and their departments are becoming gradually organised on the lines which experience shows to be most useful. The bulk of their time is, of course, taken up with researches into the nature and life history of the numerous insects and fungi which are or may become of importance with regard to agriculture; but they have also travelled through many districts of the island to investigate diseases and to give advice and assistance in dealing with their attacks. One method employed with some success has been for one of them to attend a meeting of the local Planters' Association in a given district, and there to discuss particular diseases and the modes of dealing with them, subsequently visiting selected estates to give practical instructions and to study the diseases more in detail. Such work is at present considerably handicapped by the extreme reluctance of cultivators to say or do anything that may seem to confess the presence of disease among their crops, but as time goes on the advantages of taking early advice and action will become more evident, and this source of difficulty and friction be lessened. Detailed reports of both officers are given as appendices. The organisation of a department to deal with prevention of disease is a new and a very important, though perhaps a less showy, line of work than that of the introduction of new industries. The losses caused by disease are enormous, and to save even 5 per cent. of them is a great gain."

Dr. TREUB, the Director of the famous gardens at Buitenzorg, Java, has recently visited the gardens

of Ceylon, and in speaking of the curiosities of the island, says:—

"The place could not be left without a visit to a great botanic curiosity, which, together with the ruins and the dagobas, is the object of the crowds of Buddhist pilgrims, who, especially at certain times of the year, stream towards Anuradhapura. I refer to the sacred Bo-tree (*Ficus religiosa*), regarding which it seems to be known with certainty that it was planted 288 years before our era by a certain King Dewanampiyatissa. Of this tree, nearly 2,200 years old—probably the oldest of all trees upon our earth of which the age is known—some portions are still surrounded by a high enclosure and carefully guarded by Buddhist priests living, whilst in addition several of its off-shoots, also of a respectable age, grow vigorously inside an outer wall that separates the holy place from the outer world."

THE HERBARIA AT KEW AND AT THE BRITISH MUSEUM.—The committee appointed by the Treasury to consider the present arrangements under which botanical work is done and collections maintained by the Trustees of the British Museum and under the First Commissioner of Works respectively, has reported at some length. The committee "recommend" that the whole of the botanic collections at the British Museum, with certain exceptions, be transferred to the Royal Botanic Gardens at Kew; that a new Board be formed to advise on all questions of a scientific nature. Lord AVEBURY and Mr. HORACE SEYMOUR object to the proposal of creating a new advisory Board; whilst Lord AVEBURY, better known by his former title as Sir JOHN LUBBOCK, is totally opposed to the recommendation that the herbarium now in the British Museum should be transferred to Kew. The committee consisted of Sir MICHAEL FOSTER, K.C.B., M.P. (Chairman), Lord AVEBURY, P.C., Sir JOHN KIRK, G.C.M.G., Prof. J. B. BALFOUR, Prof. FRANCIS DARWIN, F. D. GODMAN, Esq., HORACE SEYMOUR, Esq., C.B., and STEPHEN E. SPRING-RICE, Esq., C.B. We shall probably revert to the matter when our space permits.

"ALPINE PLANTS."—Under this title, Mr. W. A. CLARK, of the York Nurseries, has published a handy little volume, wherein is set forth "a practical method for growing the rarer and more difficult alpine flowers." The book is published by UPCOTT GILL, 170, Strand, London, and contains all necessary details as to soil, position, and drainage. After some generalities, in the course of which the author insists on the necessity for planting every alpine firmly by pressing the soil or the stone close to the roots, the author proceeds to give an alphabetical enumeration of the rarer and more interesting alpine plants, together with details relating to the individual requirements of each species. The details in question are the result of long experience in the management of the very large collection of alpine plants cultivated in the York Nurseries. Cultivators will naturally expect to get valuable information from such a source, and assuredly they will not be disappointed. We know of no book within its limitations so satisfactory as this, on which account we confidently recommend it, not only to the amateur, but to the professional gardener who has charge of a rockery.

COLONIAL APPLES FOR HOME.—Plentiful as has been the supply of Apples from Tasmania up to the present time, there would appear to be many more to follow. We are informed by the proprietors of the Orient line of steamers, that there are now on the way from Hobart some 32,500 cases of Apples—the *Curaco* being laden with 10,500, and the *Australia* with 22,000 cases. The fruits are finding ready sale, east, west, north, and south. In addition, the R.M.S. *Tantallon Castle* has brought from Cape Town 745 packages of Grapes, 20 of Pears, 6 of Pines, and 11 of Apples.

MR. J. W. MILLER, gardener to Lord FOLEY at Ruxley Lodge, Esher, and now in his seventy-ninth year, informs us that owing to failing health he is about to retire from this position. Mr. MILLER, who is probably one of the oldest gardeners at present in service, has been an occasional contributor to the *Gardeners' Chronicle* for half a century, and has had a most active life.

HOME CORRESPONDENCE.

PEAR BERGAMOTTE ESPEREN.—Raised seventy years since by Major Esperen of Malines, and between that time and now enjoying a well-deserved reputation, being very widely grown as a very late variety. It should now become one of the best known of all Pears, because it enjoys the distinguished reputation of having had an Award of Merit granted to it so recently as the 9th inst. by that body of fruit-growers, the Fruit Committee of the Royal Horticultural Society. This award was refused sanction by a body which does not consist of fruit-growers, the Council. The act is a surprising one, and distinctly discredits the Fruit Committee; but no doubt that body can be trusted to take care of its own reputation. What it does not know about Pears certainly cannot be supplied by the Council. We may put aside in this matter the question as to whether it is wise or desirable to make awards to old fruits, however good they may be. The fact is, the principle is both admitted and advised by the Council in its instructions to the Committees. It was also not so long since emphasised by the chairman of the Fruit Committee, who distinctly stated that the object in so doing was chiefly to instruct the public as to what were the best varieties of diverse fruits to grow. Most certainly the Committee has held that it was wrong to allow any good variety, however old, to remain unhonoured, whilst granting awards to new ones that may after all with experience prove to be worthless. It was on these lines that a good majority of the Fruit Committee, after full consideration, voted an Award of Merit to Bergamotte Esperen. On what grounds the Council refused to sanction that award, taking an altogether unusual course, and upon whose suggestion, has yet to be explained, and of course such explanation will be demanded. The fruits to which the award was made were sent from Holland Park, Kensington, by Lord Ilchester's gardener, and it may be correctly assumed that Holland Park was hardly the locality in which late Pears would be produced under the best conditions. It was also to be remembered that the date was April 9, and that a Pear that was really nice, soft, smooth-fleshed, and pleasantly flavoured was at that date a rarity. No one who knows anything about fruit would compare a variety ripening in April with the best November Pears; but whilst Pears are abundant enough in November, in April they are rare. The award was made by a considerable majority of the members of the committee present. Now, what is the reputation of this old Pear? Dr. Hogg tells us in the *Fruit Manual* that it is "a most delicious late Pear, coming into season from about the middle of February, and lasting till April. A fit successor to Winter Nelis." Early in the year, a collection of late Pears was sent up from Langley by Messrs. Jas. Veitch & Sons, Bergamotte Esperen amongst them. The variety, from trees out in the open, was then so good that it narrowly escaped getting an Award. This firm, using the description, doubtless, of the late Mr. Morle, a first-rate judge of Pears, says of it in their list:—"Medium-sized, melting, juicy, and richly flavoured. Forms a prolific pyramid, and succeeds well on the Quince." &c. Mr. George Bunyard, chairman of the Fruit Committee, does not describe it in his list of Pears; but he not only includes it in the list of other varieties, but in his select list of first-class Pears he includes it with four others as of the very latest, viz., March to May. A. D.

THE PRICE OF GRAPES.—"Grape-grower" (see a recent issue of the *Gardeners' Chronicle*) is, no doubt, quite justified in complaining as strongly as he does of the enormously enhanced prices charged by fruiterers for Grapes, and he might have said for other fruits also, in certain town localities. I have had occasion to hear of prices charged by some of these dealers that are staggering, and it is marvellous that anyone should pay them. But I have seen in many shops really good house Grapes labelled at 1s. 6d., 1s. 9d., and 2s. per lb., and with these it is evident that the retail price is anything but prohibitory. But why does not "Grape-grower" seek to establish with the public a direct basket or box trade? It is well known that Grapes of the very best quality, properly packed in small cross-handled baskets, and sent per rail, will reach their destination quite unharmed and in first-class condition. The cost of baskets and the rail charges are not great on some 6 or 8 lb. of Grapes,

and did the public know that by ordering Grapes they could purchase 2 lb., and sometimes 3 lb., for the price they pay in certain shops for 1 lb., most assuredly they would prefer to have their Grapes direct from the grower, at once fresh and cheap. I fear there are no means by which Grapes can be safely sent through the parcel post, as the treatment meted out to parcels is of the roughest; still, in neat, light wood boxes, the experiment is worth trying. And it would be interesting did the Council of the Royal Horticultural Society, in arranging the schedule for next October's fruit show, introduce a class for Grapes, not exceeding 6 lb., sent per parcel post a distance of not less than twenty miles. Clearly, "Grape-grower's" case can be remedied only by bringing grower and consumer into direct business contact. F.R.H.S.

POTATO PLANTING.—Your correspondent, Mr. Kemp, p. 208, praises a method of planting which was once common, but is now almost obsolete in the best Potato districts of Scotland. If, however, the result given by him be due to this antiquated system, the sooner it is revived again the better. As explained in the letter, this enormous crop of over 20 tons per acre was obtained by the two methods of manuring combined—on the stubble in autumn, and in the drill in spring—therefore the success may not be attributable to the last mentioned, which Mr. Kemp recommends so highly. Potato-culture cannot be entered on fully in a short letter, but I may at least discuss the merits of the two ways of preparing and manuring the soil for planting; although in my opinion the season or climate has more to do with a Potato crop than the soil, the amount of manure, or the mode of applying it. Suitable conditions of soil must be provided for the crop under any circumstances, and whether the season be a suitable one or not, the result should be in favour of good cultivation. This is an agricultural question, but there is a principle involved which applies to the garden as well as the field. What advantage is gained by spreading manure in the furrows and planting the seeds upon it, *versus* on the stubble in late autumn or early winter and ploughing it in? I take exception first to the drill method, owing to the manure being compressed by the action of the plough into a solid mass, instead of being thoroughly mixed with the soil as it should be; second, the seed being buried as it were in the manure is liable to damage, especially the young roots, and this just in proportion to the volume or strength of it; and, third, owing to the extra labour required at a season when the demand upon it is greatest. We are informed through scientific channels that organic manures must be acted upon by the inorganic elements in the soil, to prepare both and render them serviceable to the plants. If this be so, the better the manure is incorporated the more readily will chemical action take place in preparing a food supply for the immediate wants of the crop. In regard to manuring in the drill, the practice may be expedient in light porous land when there is a possibility of the winter rains washing the fertilising elements of the winter dressing beyond reach of the roots, which however would not be the case in good Potato soil. The saving of labour by the stubble manuring is also important, and is effected by mixing the summer-made manure with the first clearing of the cattle-sheds, when it is conveyed to the ground in October or November, and at once spread and ploughed in during suitable weather. Manure for the drills requires to be twice or thrice handled, while much loss often occurs in the heap during fermentation. By this brief explanation of the two methods of manuring, readers will be able to judge where either may be most beneficially carried out. I agree with your correspondent in recommending a change of seed, especially where there is little variety of soil at command. The sets should be well matured, and solid, just under the market size if planted whole, and they are in the best condition when the bud is plump and visibly swelling. No advantage is gained by greening, but the seed must be well preserved, and never stored in a dense mass when there is danger from heat starting the eyes prematurely. Then 30 inches between the drills is the distance mentioned, and this is what is generally allowed in field culture, without considering the natural top-growth of the variety. In the garden we would reduce the distance for such varieties as Sharpe's Victor, while for strong growers the distance might be advantageously

increased, especially between the sets, which are usually a foot apart; and by the time the stems are fully grown, they become intertwined, attenuated, and unable to carry their own weight. That the Potato-plant is most susceptible to weather conditions has been well illustrated lately throughout Scotland. Three years ago, the wet summer almost ruined the crop on some of the best Potato-farms on the east coast; while last summer the crop in many districts was very light from the same cause. A most favourable seed time was experienced last season, and ideal weather up till the beginning of July, after which deluges of cold rain supervened, which almost completely destroyed the leaves at a time when the demand upon them was greatest. It was only on exceptionally dry land that the crop was an average one throughout the middle counties of Scotland. To find out the effect on the crop during a dry and wet season by the two methods of manuring would be an interesting experiment. W. W., N. B.

THE QUINCE ONCE MORE.—Mr. C. A. Crafer, of Warrington, Arundel, recently very kindly sent me a sample of the Quince sweetmeat which he procured from Lisbon. It corresponds with the "Cotognata" of Italy. I thought it a good opportunity to send a little of it to each of the under-mentioned confectioners, to see if they could be induced to take up the manufacture of this kind of sweetmeat from the Quinces grown in the British Isles:—Mr. Buszard, the great confectioner, of Oxford Street; The Army and Navy Co-operative Society; and Messrs. F. & A. Longley, of Rye, the manufacturers of Quince marmalade. I informed them that if they could make this sweetmeat, it would find a ready sale, as all those to whom I had given some thought it delicious, and were sorry that they could not get it in England. Mr. Buszard replied that "he would be pleased to take the suggestion into consideration." The Secretary of the Army and Navy Co-operative Society said that the "Society's confectioner would have no difficulty in preparing the sweetmeat, but it could only be done in the fruit season, when the matter should have further attention." Messrs. F. & A. Longley stated that they thought the sweetmeat very delicious, but added that, "at present we are unable to do anything in the way of making it, as the supply of Quinces is so limited, and our sale of marmalade increasing every year, that we hardly get enough to meet our requirements." Here, then, there would seem to be an opening for a new industry, in the way of growing Quince-trees on a large scale for the supply of this much-to-be-desired fruit, especially in Sussex, where it is said the best Quinces are produced. Will no one try the experiment of planting an orchard of a thousand Quince-trees or more? It would appear that the supply of this fruit is shorter than the demand for it, while Apples are a drug in the market. Messrs. George Bunyard & Co. have six different varieties of Quince-trees, and they state in their catalogue that the Quince "delights in damp soil, and can therefore be planted on swampy land." Thousands of young Quince-trees are grown by every fruit-tree grower, but they are used as stocks for grafting Pears on. As the Quince-tree delights in damp soil, it would appear well adapted to Western Ireland. Could not some wealthy philanthropist, or a company, start Quince-growing in Western Ireland, and then set up a factory there for working the fruit into this delicious "cotognata," which, I should imagine, would find a sale all over the British Isles? E. Bonavia, M. D.

THE APIARY.

SECTION CRATES.

THESE should now be looked up and cleaned for use; every crate should be boiled in strong soda-water and well scraped, to clean all propolis off, and also to destroy any eggs of the wax-moth or any other disease. A little naphthaline should be placed in the hives at the back, not too much—either flaked or in the stick will do.

ROOFS AND ENTRANCES.

All bad roofs should now be marked, so that any that are leaky may be repaired when convenient. All entrances should now be widened a little, but not too much at one time. Expert.

SOCIETIES.

ROYAL HORTICULTURAL.
Scientific Committee.

APRIL 9.—*Present*: Dr. M. T. Masters, F.R.S., in the Chair; Messrs. Houston, Odell, Chapman, O'Brien, Drury, Saunders, Hudson, Bowles, Veitch, Gordon, Dr. Rendle, Prof. Boulger, and Rev. Prof. Henslow, Hon. Sec.

Pseudo-fasciation of Ash.—A specimen was exhibited of a diseased Ash-bough by Mr. ODELL, who described it as follows:—"This is a diseased condition of the inflorescence resulting in the fusion of the pedicels into a thick and shapeless mass, which hardens into quite a woody structure. These sub-fasciated clusters are said by Professor Kerner, and also by Mr. A. Murray, F.L.S., to be due to the attacks of a minute Phytophthora. The accompanying specimens were obtained from trees growing by the river Ouse at Olney, in North Bucks, where I recently observed that this diseased condition was common to the Ash-trees growing along the valley of the Ouse; in some cases only slightly, in others the trees were thickly covered with the 'fasciated' clusters. It did not appear that the trees were in any way stunted or affected by the disease; but as the result is to prevent the development of seed, it may be that the vegetative processes are stimulated by the partial and abnormal suppression of the reproductive functions." The condition is figured in *Masters' Vegetable Teratology*, p. 421.

Masdevallia, sp.—Mr. CHAPMAN brought the following species, upon which Mr. RENDLE reports as follows:—"Masdevallia Lowi, Rolfe, in *Gardeners' Chronicle*, 1890, i. 416, is said by Miss Woolward, in her monograph of the genus, on Consul Lehmann's authority—"who has had the advantage of examining Prof. Reichenbach's dried specimens"—to be the same as *M. trinema*, Reichenb. f., in *Flora*, 1886, 538. As *M. Lowi* was not described till after Prof. Reichenbach's death, when his dried specimens could no longer be consulted, Consul Lehmann's opinion should seem to be based on memory. A comparison of the flower of *M. Lowi* with the description of *M. trinema* suggests that Mr. Rolfe was justified in regarding his plant as a distinct species. The sepal tails of *M. trinema* are said to be much longer than the triangular bodies, whereas in *M. Lowi* they seem to be always markedly shorter. The bidentate tip of the column marks another discrepancy, that of *M. Lowi* bearing several fimbriations. Moreover, Reichenbach's statement that the dimensions of *M. trinema* are those of his *M. Gaskelliana*, points to a smaller flower than that of *M. Lowi*.

Cypripedium with two lips.—He also showed this not uncommon phenomenon. As the flower had three sepals and two petals beside the lips, the result had occurred in consequence of, or in correlation with, a bifurcation of the axial cord belonging to the lip. This was borne out by a dissection of the flower.

Poterium spinosum.—Mr. SAUNDERS exhibited a plant of this species covered with spiny branches and minute leaves with inrolled margins. These features are very characteristic of many plants growing in deserts and other excessively dry localities. It is a native of Palestine, &c.

Epidendrum hybrids.—Mr. VEITCH exhibited and described the following new hybrids:—*E. Wallisi* × *E. Endresi* = *E. Endresio-Wallisi*. This hybrid × *E. Wallisi* = *E. elegantulum*, *E. Wallisi* × *E. elegantulum* = *E. Clarissa*. *E. Wallisi* grows to a height of 5 or 6 feet, whereas *E. Endresi* is not more than about 1 foot in height. The first hybrid was about 2 feet in height; the second, *E. elegantulum*, grows to a height of 3 to 4 feet. There are many varieties among the *Clarissa* progeny, one being much finer than all the rest, called *C. superba*. *E. Endresi* is a native of Costa Rica, and *E. Wallisi* of New Grenada. The hybrids partook more of the characters of the flower of *E. Endresi* than of those of *E. Wallisi*, which has a much larger blossom than the former.

Peduncles of Grapes becoming tendrils.—Mr. HUDSON exhibited some specimens from a vine in which the whole crop had degenerated into quasi tendrils, but bearing small groups of buds upon them. It is well known that peduncles and tendrils are homologous in the Vine, and therefore interchangeable. The cause was presumably an arrested growth from chill, as the roots were said to be healthy.

Fasciated Stems.—Mr. BURBIDGE sent a series of examples of this peculiarity, remarking upon a branch of *Cotoneaster microphylla*, which had the buds continually rubbing on a roof, that this irritation possibly caused the fasciation, adding—"I am led, after considerable observation, to believe that irritation of, or injury to the normal terminal or lateral buds, whether by friction, insects, or other causes, is at the bottom of the phenomenon." He adds, "That besides being hereditary from seeds in the Cockcomb, the 'Stag's-horn' Ash—a fasciated condition—can be perpetuated by grafting." Mr. O'BRIEN referred to his experience that Ferns standing near an entrance of a conservatory, and continually

"brushed" by passers, become more or less fasciated and crested. Mr. DRURY mentioned how Ferns if tripartite became crested. Mr. HUDSON observed, that of some Water Lilies which produced fasciated stems, portions of the rhizomes were transferred to Kew; they also produced them there, showing that fasciation may be an acquired habit, and transmitted either by the vegetative or reproductive organs.

Fasciation and Allied Phenomena.—Mr. HENSLOW explained how fasciation arose from a continual bifurcation of the fibrovascular bundles of the stem without forming cylinders for axillary buds. A similar cause gave rise to "multifold" flowers as distinct from "synanthic." It also applied to fimbriated and crested flowers, as well as multifold axes in Pears and carpeles in Tomatos. Being an "affection" it would be hereditary, as in the Tomato and the campanulate terminal flowers of Foxgloves. (Further details will appear in the paper to be published in full in the *Journal of the Royal Horticultural Society*.)

DAFFODIL SHOW AT IPSWICH.

APRIL 9.—In spite of very stormy weather, a large company availed themselves of the opportunity to see the Daffodils in the spacious Corn Exchange, which was filled to overflowing with plants and flowers, Daffodils largely preponderating. Owing to the early date fixed for the show, many who had entered found themselves unable to exhibit. But there was a wealth of miscellaneous collections, and the hall was so well filled that locomotion became somewhat difficult. The exhibition was organised by a committee, of which Messrs. A. E. Stubbs and W. Andrews were the secretaries.

The first four classes for collections of Daffodils brought no exhibitors for the reason stated. In the class for six bunches of Lent Lilies, the old double Daffodil was shown in very fine character. Mr. A. Andrews, gr. to the Hon. W. LUTHER, Campsey Ash, taking the 1st prize; Mr. JOHN ANDREWS, Woodbridge, was 2nd. In the next class for six bunches of Daffodils the positions were reversed.

Vases of Daffodils in threes were a good feature; Mrs. BETTS, Woodbridge, was awarded the 1st prize.

Floral decorations, mainly shown by ladies, were both numerous and varied. Miss STEWARD of Woodbridge, and Miss M. CARTER of the same place, were the principal prize-winners.

A miscellaneous class for nurserymen and market-gardeners' produce brought half-a-dozen exhibits, quantity being too surely apparent in most cases to the loss of effect. Decidedly the best came from Mr. C. CLOVER, Westgate Street.

One class of a particularly interesting character was for a box or basket of cut blooms to contain from twenty-four to thirty-six bunches, to illustrate the best method of packing. The two leading boxes came from growers in the Scilly Islands, and they had made the long journey with the contents very fresh; but nothing novel in the way of packing was forthcoming.

Miss WILLMOIT, Warley Place, sent some excellent blooms of her new Daffodil, *Allen's Beauty*, which was awarded a Certificate of merit.

In the way of extra contributions, Messrs. W. CUTBUSH & SONS, Highgate Nurseries, covered a large space of table with Tulips, Cinerarias, greenhouse Ericas, Cyclamen, &c. (Gold Medal); Messrs. R. WALLACE & Co., Colchester, a large collection of the hardy bulbous plants they cultivate (Silver-gilt Medal).

Mr. LEONARD BROWN, Brentwood, had a collection of highly-developed forms of *Narcissus* grown in pots in a compost made up of one-third part of Jadoo fibre and two-thirds of grit from a gravelled road. This seemed to have brought out the characters of the varieties at their best (Silver Medal); Messrs. C. H. CROFTON & SONS, Ipswich, had a large table of rustic decorations with elegant stands and flowers (Silver Medal); Mr. R. C. NOTCUTT, nurseryman, Ipswich and Woodbridge, had a good group of foliaged plants and flowers (Silver Medal); Mr. T. S. WARE, Ltd., Feltham, had a large collection of Daffodils (Silver Medal); Messrs. I. HOUSE & SON, Westbury-on-Trym, had a collection of Violets.

CORNWALL DAFFODIL AND SPRING
FLOWER SHOW, TRURO.

APRIL 11.—The annual show of the above Society took place in the Concert Hall, Truro. Considering the rigours of the past month, scarcely the most sanguine would have expected a very grand display from flowers grown exclusively in the open air; but not a damaged petal was to be seen in the countless blooms that decked the hall. Daffodils gleamed in saffron and sulphur, brightened here and there by the orange-scarlet cups of seedlings, for which *Narcissus*-lovers have to thank Mr. Engleheart's years of patient labour; Rhododendrons and Camellias glowed in crimson and pink, and a length of staging was purple with odorous Violets.

THE AWARDS.

For the best collection of not more than fifty Daffodils in the magni-coronati, medio-coronati, and parvi-coronati sections, 1st, Lady MARGARET BOSCAWEN, with a fine selection of forty-seven varieties; 2nd, P. D. WILLIAMS.

For the best collection of not more than forty varieties in the same sections, 1st, Rev. A. T. BOSCAWEN; 2nd, Miss F. CURREY.

Ten distinct single varieties magni-coronati, 1st, W. N. CARNE; 2nd, M. H. WILLIAMS.

Ten distinct single varieties medio-coronati, 1st, Rev. A. T. BOSCAWEN; 2nd, M. H. WILLIAMS.

Ten distinct single varieties, parvi-coronati, 1st, W. N. CARNE.

Fifteen distinct varieties, any section, fourteen entries, 1st, Sir GEORGE SMITH; 2nd, A. P. NIX; and 3rd, Rev. A. T. BOSCAWEN.

In the foregoing classes, no flowers from bulbs costing more than 10s. each, were allowed to compete. In the following classes this regulation did not apply.

Ten distinct single varieties medio-coronati, 1st, J. C. WILLIAMS, with a grand selection containing Cardinal, Torch, Sirius, Lucifer, and unnamed seedlings.

Ten distinct single varieties parvi-coronati, 1st, J. C. WILLIAMS, with Firebrand, possessing the most glowing cup of any *Narcissus*; Dante, a very large poeticus, and eight unnamed seedlings of great merit.

Finest single bloom magni-coronati, equal 1st, Lady MARGARET BOSCAWEN, with King Alfred; and J. C. WILLIAMS, with Weardale Perfection.

Finest single bloom medio-coronati, 1st, Rev. A. T. BOSCAWEN, with Seagull; 2nd, J. C. WILLIAMS.

Finest single bloom parvi-coronati, 1st, P. D. WILLIAMS, with Dante; 2nd, E. H. WILLIAMS.

Finest bloom of English-raised Daffodil not in commerce, equal 1st, Rev. G. H. ENGLEHEART with Oriflamme and an unnamed, golden seedling of magni-coronati section with very spreading trumpet; 3rd, C. WILLIAMS.

In the last few classes, proof was given of the great strides made in Daffodil hybridisation during the past few years, and it may be assumed that such a selection of priceless seedlings have never before been collected together in the same room.

CERTIFICATED VARIETIES.

The Society's First-class Certificate was awarded to King Alfred, exhibited by Lady MARGARET BOSCAWEN; to Seagull, exhibited by Rev. A. T. BOSCAWEN; to Dante, exhibited by J. C. WILLIAMS; and to General Roberts, in Messrs. BARR's stand; and Awards of Merit to four unnamed seedlings, conditionally on their being named by their owners. Cultural Commendations were awarded to M. H. WILLIAMS for remarkable *Telamonius plenus* shown in Class 9; to Capt. W. S. C. PINWILL for some extraordinary specimens of *Maximus* with stems almost 3 feet in length; and to C. DAWSON for giant Emperors; the two latter varieties being shown "not for competition."

From the Scilly Isles, T. A. DORRIEN-SMITH, Esq., sent a collection of 120 bunches of Daffodils in different varieties; and F. G. B. WATTS, forty varieties.

Collection of hardy herbaceous flowers: 1st, D. H. SHILSON, with over seventy species and varieties; and 2nd, P. D. WILLIAMS, with a smaller collection, containing some good *Erythroniums*; 3rd, Mrs. POWYS ROGERS, the latter lady showing, not for competition, a fine spike of the New Zealand Forget-Me-Not (*Myosotidium mobile*). In the classes for Violets, which were especially good, over eighty bunches being staged, the chief prizes were won by R. FOX and Mrs. E. H. WILLIAMS.

The section confined to hardy flowering shrubs produced, in the class for the best group of Rhododendron blooms, a superb collection sent by Mr. D. H. SHILSON, consisting of forty trusses of varied hues, amongst which were the crimson *Shilsoni* and *barbatum*, the large odorons white *Lady Alice Fitzwilliam*, *Lady Harding*, *Sesterianum*, *fragrantissimum*, and *albescens*, with numerous arboreum seedlings. Colonel TREMAYNE showed, not for competition, a group of Rhododendrons, to which a Cultural Commendation was awarded, containing a plant of the noble *R. Nuttalli* in full flower. For cut blooms of Rhododendrons and Azaleas, Messrs. D. H. SHILSON and R. FOX took the premier awards. In the class for the best Camellia bloom Mrs. J. WILLIAMS took 1st, with a magnificent specimen of *C. reticulata*, over 7 inches in diameter, Mrs. POWYS ROGERS taking 2nd; while D. H. SHILSON and Mrs. J. WILLIAMS took 1st and 2nd for six Camellia-blooms. The class for hardy flowering shrubs produced three fine collections, the awards being—1st, R. FOX; 2nd, A. PENDARVES VIVIAN; 3rd, M. H. WILLIAMS.

Messrs. BARR, WARE, R. VEITCH, and GAUNTLETT showed interesting stands, all of which were awarded Certificates of Merit by the society. Messrs. BARR staged a fine collection of Daffodils, together with numerous alpine. Messrs. WARE Feltham, showed, in addition to Daffodils, a large assortment of rock and other plants, amongst which were many species of Saxifrages, Primulas, Fritillarias, Irises, &c. Messrs. R. VEITCH had a varied selection, included in which was *Cocos australis*, hardy in the south-west; *Dimorphothecas*, *Sarracenias*, new Philadelphia, &c. Messrs. GAUNTLETT's collection comprised *Magnolias*, *Tricuspidaria hexapetala*, and *Illicium floridanum* in flower.

FRUITS.

For collection of Apples J. C. DAUBUZ was 1st, H. H. WILLIAMS 2nd, and E. B. BEAUCHAMP 3rd.

THE NURSERYMEN, MARKET GARDENERS, AND GENERAL HAIL-STORM INSURANCE CORPORATION LIMITED.

APRIL 12.—The Sixth Annual General Meeting of this Corporation was held at the Registered Office, King Street, Covent Garden, London, W.C., on Friday, April 12, 1901.

The Chairman of the Corporation, Mr. HARRY J. VEITCH, presided, and there was a good attendance of shareholders.

The Chairman reported that the year had been remarkable, first, for the number of hailstorms, and the fact that they occurred in all parts of England and Scotland, and third, that the hailstorms covered practically the whole of the year, that is, from February 1900 to January 1901.

Thirteen claims had been made on the Corporation from various parts, namely, Orkney Islands, Essex, Berkshire, Bedfordshire, Suffolk, Gloucestershire, and Kent, and the letters received from the claimants show that the Corporation upholds its name for prompt and liberal settlement of claims.

The growth of the business during the six years has been gradual and progressive year after year, as shown by the figures for each year ending February 23:—

Year.	Policies in Force.	Square feet.	Value.	Premiums.
			£ s. d.	£ s. d.
1896	235	10,408,161	132,215 16 0	681 1 9
1897	346	13,886,095	179,366 11 1	889 11 5
1898	550	20,098,104	263,590 19 1	1,360 17 0
1899	749	25,619,760	343,439 7 8	1,736 0 6
1900	825	28,855,076	391,202 15 4	1,962 0 1
1901	925	30,826,958	418,644 2 3	2,092 1 10

The working expenses amounted to a ratio of £21 per cent. on the income for the year.

The interest on invested funds had increased from £20 16s. in 1896, to £426 11s. 10d. in the year just ended, and would be sufficient during the next year to pay 4½ per cent. on the paid-up capital, without touching premium income.

The balance-sheet showed the satisfactory fact that, after payment of the proposed dividend, there would be £1 8s. invested or in cash for every £1 of paid-up capital.

The cost price of invested funds amounted to £14,427 13s. 3d.

The report was received with much satisfaction, as was the recommendation of the Directors that a dividend at the rate of 5 per cent. per annum, and a bonus of 2½ per cent. per annum, free of income tax, be paid; that £340 be placed to the reserve fund, and that the balance of £576 12s. 3d. be carried forward.

THE LEESWOOD (MOLD) MUTUAL IMPROVEMENT.

APRIL 10.—The subject of "Gardening" was brought before the above Society on the above date, when Mr. D. JONES, the head gardener and bailiff at Hartsheath Park, read an interesting and instructive paper to a numerously attended meeting of the members. Mr. Jones for many years past has taken a very active part in encouraging the cottagers of the district to deal fairly with their gardens, showing them the pleasure and profit that could be obtained by cultivating their plots of land to the best advantage, and in this he has succeeded to a large extent. His paper on the 10th dealt chiefly on the composition of soils, and the preparation of the same to receive the seeds and plants that are most suitable for cultivation in each. Useful information was also given on fruit, vegetables, and flowers, and at the conclusion questions were asked, and his answers and paper were evidently greatly appreciated. A.E.H.

HIPPEASTRUMS AT MESSRS. J. VEITCH & SONS, CHELSEA.

The annual display of Hippeastrums at this nursery is still found by gardeners and connoisseurs to be as interesting as ever, new combinations of colour in the blossoms, and a general advance towards the circular form so generally admired being presented by the seedlings now flowering for the first time. The average quality is this year higher than in any previous year.

We may mention among varieties of striking beauty, Marathon, a fine form, of deep crimson, which received a Certificate at the last meeting of the Royal Horticultural Society; Telemus, a flower having a white ground, tessellated with cerise; Geticus, a very fine bloom of a rich crimson tint, with a white feather on each segment of the perianth; Ferculus, white ground, tessellated with cerise; Arcadia, similar, but less sparingly marked; Titan, also white, marked with cerise, a very fine variety; Sirenes, snow-white segments, tipped with cerise—a large bloom; Opertus, a very fine self, of a shade of crimson; and Rialto and Averunicus varieties, already Certificated; Agneta, a very pretty scarlet, with white edges to the segments; Clarice, a pure white self; Fidius, a fine crimson self-coloured variety; and Dolores, another very large and fine crimson self, possessing an upper segment 4½ inches in width.

If the present dull weather continues, the collection will be found in fine condition for three weeks longer. What the seedlings of one and two years old, now being cultivated at Feltham and Chelsea, will afford us, what surprises, and what improvements, time alone will show; but that they will be commensurate with past achievements we cannot doubt.

Obituary.

MAJOR FREDERIC FRANCIS HALLETT.—The death occurred recently at Manor House, Kemp Town, Brighton, of Major Frederic Francis Hallett, whose successful experiments in the cultivation of pedigree Wheat in the sixties and seventies gained him a great reputation in the agricultural world. He was seventy years of age.

ENQUIRY.

HYACINTHS.—Will some of our correspondents kindly inform C. W. Dod if any botanist ever answered Virgil's riddle, eclogue iii., 126, "Tell me in what land flowers are found with the (initials of) the names of kings written upon them." Pliny says, H. N., xxi., 38, "The veins of the flower (Hyacinthus) diverge in such a way that the form of the Greek letters AI may be read in them." Other accounts say the initial was the Greek T, the first letter of Uacinchus; Latin: Vaccinium. He knows the riddle is nearly 2000 years old, but he could never find it answered.

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period April 7 to April 13, 1901. Height above sea-level 24 feet.

1901.		DIRECTION OF WIND.	TEMPERATURE OF THE AIR.				TEMPERATURE OF THE SOIL AT 9 A.M.				RAINFALL.	LOWEST TEMPERATURE ON GRASS.
APRIL 7 TO APRIL 13.	At 9 A.M.		DAY.	NIGHT.	At 1-foot deep.	At 2-feet deep.	At 4-feet deep.					
	Dry Bulb.							Wet Bulb.	Highest.	Lowest.		
SUN. 7	S.W.	51.8	49.9	60.3	42.2	20.1	10.4	44.5	43.9	44.3	41.5	
MON. 8	S.W.	49.9	44.9	61.1	50.1	0.02	46.8	44.9	44.4	42.6		
TUES. 9	S.S.W.	50.7	44.9	57.4	43.0	0.05	47.0	45.5	44.6	38.4	26.0	
WED. 10	S.S.E.	47.9	45.6	51.6	38.8	0.33	47.0	45.9	44.9	31.2		
THU. 11	S.S.E.	47.4	45.8	53.9	41.4	0.40	46.5	46.0	45.0	31.5		
FRI. 12	N.W.	43.9	40.0	48.5	38.2	0.02	46.8	46.0	45.2	31.0		
SAT. 13	S.S.W.	42.8	39.9	64.9	41.4	8.0	45.2	46.0	45.5	26.5		
MEANS...	...	47.8	44.4	54.6	41.2	1.0	46.2	45.5	44.8	32.1		

Remarks.—Strong winds and cold rains have been the prevailing features of the past week.

THE WEATHER IN WEST HERTS.

A WEEK of cold and showery weather. The days have been more unseasonably cold than the nights, and on no night did the exposed thermometer show more than 4° of frost. The soil temperatures are still low, the ground at 2 feet deep being 2° colder, and at 1 foot deep 4° colder, than their respective April averages. The persistency of the rain-fall has been very remarkable; indeed, since the month began there has been only one dry day. The total measurement for the first half of the month amounted to 2½ inches, which is ½ inch in excess of the average for the whole of April. During the week 4½ gallons of rain-water came through the bare soil percolation gauge, and 4 gallons through that covered with short grass. The average duration of bright sunshine for the five days ending the 14th was less than 1½ hour a day. Since the month began the winds have been, as a rule, high, but for only 24 hours altogether was the direction any point between north and east. The atmosphere was decidedly humid for April. Sisyrinchium grandiflorum came first into flower on the 10th, Anemone ranunculoides on the 13th, and A. apennina on the 15th, or respectively ten days, two days, and four days later than last year. The swallow first visited the Berkhamsted Watercress-beds on the 9th, which is one day later than its average date for the previous ten years. E. M., Berkhamsted, April 16, 1901.

MARKETS.

COVENT GARDEN, APRIL 18.

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.		s. d. s. d.	
Asparagus "Fern," bunch ...	1 0-2 0	Lily of Valley, per doz. bunches ...	6 0-12 0
Carnations, per doz. blooms ...	1 0-2 6	Maidenhair Fern, per doz. bunches ...	4 0-8 0
Cattleyas, per dozen ...	9 0-12 0	Mignonette, per doz. bunches ...	4 0-6 0
Eucharis, per dozen ...	2 0-4 0	Odontoglossums, per dozen ...	2 6-6 0
Gardenias, per doz. Lilium Harrisii, per dozen blooms ...	3 0-5 0	Roses, Tea, white, per dozen ...	1 0-3 0
Lilium lancifolium album, per dozen blooms ...	1 6-3 0	— Catherine Mermet, per dozen ...	3 0-6 0
Lilium rubrum, doz. ...	3 0-5 0	Smilax, per bunch ...	3 0-5 0
Lilium longiflorum, per dozen ...	4 0-6 0	Tuberose, per doz. blooms ...	0 4-0 6
PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.			
s. d. s. d.		s. d. s. d.	
Adiantums, p. doz. ...	5 0-7 0	Ferns, small, per 100 ...	4 0-6 0
Arbor-vitæ, var., doz. ...	6 0-36 0	Ficus elastica, each ...	1 6-7 6
Aspidistras, p. doz. ...	13 0-36 0	Foliage plants, var., each ...	1 0-5 0
— specimen, each ...	5 0-10 6	Lily of Valley, each ...	1 9-3 0
Cannas, per dozen ...	18 0 —	Lycopodium, per dozen ...	3 0-4 0
Crotons, per doz. ...	18 0-36 0	Marguerites, per dozen ...	8 0-12 0
Cyclamen, per doz. ...	8 0-10 0	Myrtles, per dozen ...	6 0-9 0
Dracenas, var., per dozen ...	12 0-30 0	Palms, various, ea. ...	1 0-15 0
— viridis, per doz. ...	9 0-18 0	— specimen, each ...	21 0-36 0
Ericas, var., per doz. ...	12 0-36 0	Pelargoniums, scarlet, per dozen ...	0 12 0
Eucynymus, various, per dozen ...	6 0-18 0	— Ivyleaf, per doz. ...	8 0-10 0
Evergreens, var., per dozen ...	4 0-18 0	Spiræas, per dozen ...	6 0-12 0
Ferns, in variety, per dozen ...	4 0-18 0		
FRUIT.—AVERAGE WHOLESALE PRICES			

s. d. s. d.		s. d. s. d.	
Apples, English,		Grapes, New Ham-	
per bushel—		burgh, per lb.	4 0-5 0
cookers, large ...	4 0-7 0	— Almeida, doz. lb.	8 0-12 0
various ...	4 0-5 0	— Belgian, per lb.	1 0-1 9
— Nova Scotia,		Lemons, case ...	9 0 —
per barrel ...	16 0-27 0	Lyches, new, pkt.	6 10 —
— Californian, per		Melons, each ...	2 0-3 0
box ...	10 0 —	Oranges, Navel ...	16 0-18 0
— Wellington ...	8 0-10 0	— Murcia, case ...	6 6-7 6
— Tasmanian, case	10 0-17 0	— Denia ...	18 0-20 0
— Cape, case ...	6 0 —	Pears, Californian	
Bananas, bunch ...	7 0-10 0	Easter Beurré,	
— loose, per doz.	1 0-1 6	half cases ...	15 0 —
Cobnuts, lb. ...	0 6-6 ½	Pines, each ...	2 0-4 0
Crabberries, case ...	10 0 —	Sapucaia nuts, per	
Figs, per dozen ...	18 0 —	lb. ...	1 0 —
Grapes, Alicante,		Strawberries, A, lb.	5 0-6 0
per lb. ...	3 0-4 0	— B., per lb.	2 0 3 0

VEGETABLES.—AVERAGE WHOLESALE PRICES.				
	s. d.	s. d.	s. d. s. d.	
Artichokes, Globe,			Mint, per dozen	
per doz. ...	2	0	bunches, new ..	
— Jerusalem, sieve	0	9	4	0
Asparagus Sprue ...	0	8	— Mushrooms, house,	
— Paris Green, bun.	5	0	per lb. ...	
— home - grown,			Onions, picklers,	
per bundle ...	5	0	— per sieve ...	
— Spanish, bundle	2	0	— per bag ...	
— Giant, bundle	7	0	— cases ...	
— various, from ...	1	6	— English, p. cwt.	
Beans, dwf. Madeira,			bag ...	
per bkt. ...	2	6	— Egyptian, bags	
— Ch. Islds, and			new, bunches,	
home, dwf.,			per doz ...	
new, per lb. ...	0	9	2	0
— French, dwf.,			— Parsley, 12 bunches	
packets ...	0	4	per sieve ...	
— Broad, in flats	3	6	9	0
Barbe de Capucine.	0	4	— Parsnips, per cwt.	
Beetroots, bushel ...	1	3	bag ...	
Beet, per dozen ...	0	6	Pear, framed, dz lb.	
Broccoli Sprouts, per			Flats ...	
			7	0

COMMUNICATIONS RECEIVED. — E. D. — Carrington, Lady Amateur — W. Darbyshire — Chiria — T. H. S. — F. R. S. — J. B. — H. T. M. — A. W. — W. S. — R. M. — J. O. B. — S. — H. W. — E. M. — E. L. B. — B. Jones — E. C. H. H. D. — A. P. — M. C. — F. — H. W. W. — H. J. E. — M. Gentil, Belgium — F. T. M. — B. B. W. — with many thanks — A. O. H. — K. — L. M. — C. W. D. — S. W. F. — R. N. — Harrison Weir — S. A. — D. Debono, Malta, with many thanks — F. W. B. — County Council Times — J. T. B. — Professor Penhallow, Montreal, with thanks.



A TOWN GARDEN—VIEW IN THE GARDENS OF LUDWIG MOND, ESQ., REGENT'S PARK.



THE

Gardeners' Chronicle

No. 748.—SATURDAY, APRIL 27, 1901.

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THE "OLD" AURICULA.

THOUGH we do not find the Auricula mentioned in the earliest books on gardening, or, in fact, till *The Garden of Pleasant Flowers* appeared in 1629, there can be no reasonable doubt that it was cultivated in England long previous to that date. Clusius, when he left this country in 1581, took along with him a number of plants, among which was a variety of the Auricula, which however did not live till his journey was consummated; but he got the same variety later on from a continental florist. The same author notes a kind of Auricula that formed a regular source of profit to women who sold the roots in the market-place of Vienna. Gerard's *Herball* contains notices of several varieties that were held in esteem; and that eminent florist Master Tuggye, of Westminster, like some florists of the present day, bestowed his divided affections on the Auricula and the Carnation.

The great variability of the plant, due, no doubt, to its hybrid origin, accounts for the rapidity with which new varieties in new shades

of colour were produced. In Parkinson's day there were already various shades of purple, of yellow, of rose, of red, of white, and even of green! and in his dry, humorous way he called one sort "Spanish Blush," because the colour was so dull that it resembled "the blush of a Spaniard," whose cheeks, it would seem, were less capable than those of an Englishman of producing a genuine "celestial rosy-red" blush. Petals had also been evolved with shaded edges. A common name among women for the plant was at this time "French Cowslip," indicating its introduction from a continental source, because exotic plants generally were then as a class denoted by the word "French."

Rea in his *Flora* devotes an interesting and informing chapter to the Auricula, and names no less than nineteen persons at that time engaged in raising novelties from seeds. The name of Jacob Bobart of the Oxford Botanic Garden, occurs among these; and also the names of two ladies, the one a Mrs. Austen, and the other "Mistress Buggs," who lived and raised new flowers in "Battersey near London." By this time the yellow and the white Auricula had fallen in esteem, while the purples appear to have held the pre-eminence. Of these, "Black Imperial" and "Rickett's Sable" might "without much error be called black." Already there were two varieties in general cultivation which produced striped flowers. A late innovation was naming all varieties, and in Fair Virgin, Virgin's Milk, the Matron, the Cow, and the Red Bull, we have a few choice examples of the names in general request.

Rea's compost for pots in which the best sorts were cultivated consisted of good sandy soil, well mixed with sifted neats' dung, but previous to falling back on this the pots were "filled almost half-full" of the last-named material. The advice given for the disposal of discarded seedlings affords a curious commentary on the ways of the old-time florists. Let them, he says, be sent "to the flower-market, the common Emptory of trash and refuse."

Rea's son-in-law, Samuel Gilbert, was also a keen cultivator of the Auricula. In 1683, when his *Florists' Vale Mecum* was published, double-flowered varieties had attained to the greatest popularity of any, and the individual flowers were so large that one he mentions measured "a straw's breadth" more than "a new half-crown," doubles included, besides many self colours, varieties with striped flowers. Like Rea, this author emphasises the importance of "snow-white eyes that will not wash with rain;" plants sold at "one to two, three, four, or five pounds" each.

It will be apparent that the varieties cultivated in these early times were all either selfs or fancies, and possessed few features akin to the stage varieties of to-day. Even as late as 1759, the collection of Justice, a Scotch grower of great eminence, contained no edged flowers; and it would appear that very large trusses were considered a point of considerable value in an Auricula. Maddock, however, states that the first edged variety was introduced from Holland in or about the year 1740, and that from this single plant nearly all the varieties in cultivation towards the end of the eighteenth century had been raised. The catalogue of this florist is said to have enumerated 500 sorts for sale. I have grown Kenyon's Ringleader and Grime's Privateer, both varieties known at this period. A coloured picture of the last-named in *The Temple of Flora* is an exact representation of the variety; the truss is shown with

twelve pips, and affords a good idea of a first-class Auricula of about 100 years ago.

It is notorious that the Auricula is rarely now found in any big gardens, but at the time of which we write, it was one of the subjects that engaged the best attention of the gardener; and it was Nicol, a well-known horticulturist and author of gardening books, who made the first attempt at cross-fertilising the flowers as a means of securing improvements. Neill mentions several gardens in the north as leading the way horticulturally, and it is noteworthy that we find among the gardeners who managed these, leading exponents of Auricula-growing. It is a moot point whether the love of the Auricula spread from the operative amateur to the gardener, or from the latter to the former. It is generally assumed that the last-named was the way, but it is evident that the literature of the subject does not certainly prove that to be the case. The merchants of London seem to have been the earliest growers of the plant; then we have ladies, clergymen, Oxford men, and gardeners, evincing the greatest love for the flower; but how long the operatives of Lancashire, Yorkshire, Paisley, and other places, have been engaged in its cultivation it seems now impossible to determine. Up to the time that the edged or "painted" flowers were introduced, and for some time afterwards, size of truss seems to have been the great object of the cultivator; and later, the quality of the individual bloom has become more and more the point of attraction to the florist, so that the "pip" of to-day is quite another thing, increased in size, and improved in marking from that of a hundred years ago and earlier. A yellow strain worked up by Messrs. Storie & Storie, Dundee, would appear to be a revival, but on greatly improved lines, of the yellow flowers of Parkinson's time. To the general cultivator they present many charms, and if to these some one could secure a "virgin" white flowered strain, we might be content to let the striped flowers remain in the limbo of forgetfulness. B.

NEW OR NOTEWORTHY PLANTS.

IRIS WILLMOTTIANA.

I HAVE received from Messrs. van Tubergen, of Haarlem, Holland, a charming little Iris, which seems to me to be, for the garden, at least, distinctly a new one (see fig. 100, p. 271).

The habit is that of *I. caucasica*, and this it resembles in the size, shape, arrangement, and horny margin of the leaves; the surface of the leaf is, perhaps, more glistening, devoid of the glaucous sheen, but otherwise I can see no marked difference between the two. The flowers, four to six on the scape, as in *I. caucasica*, are, as in it, sessile. The colour of the flower is, however, wholly different; instead of being yellow, it is lavender, or some similar tint of diluted purple, with blotches of white, mingled with marks of a deeper lavender on the blade of the fall. The general form of the flower is that of *I. caucasica*, and one might be tempted to regard it as a blue (or purple) form of *I. caucasica*. But there are differences besides those of colour. Not only is the flower rather smaller than that of *I. caucasica*, but also the lateral expansions of the claw of the fall are much less marked than in *I. caucasica*, and are not transparent; in this respect the new plant approaches *I. orchinoides*, and indeed it stands somewhat midway between that plant and *I. caucasica*. The spathe-valves, again, are not inflated, as in *I. caucasica*, but narrow, as in *I. orchinoides*. The crests of the style, too, are triangular and small, not quadrate and large, as in *I. caucasica*.

On these grounds, especially in view of the present condition of views as to what a species is, I think this new Iris fairly deserves to be given a specific name; and I venture to suggest the name of *I. Willmottiana*, in recognition of the gardening services of a well-known lady.

It was found growing wild in 1899 by the collector of Messrs. Van Tubergen, on the mountains of Eastern Turkestan, occurring at a considerable height. *M. Foster, Shelford, April 5, 1901.*

THE DOUBLE WHITE HEPATICA

is apparently to be considered no longer as a myth, or even as an historical fact, but a present reality. Mr. H. Cannell, of Swanley, showed us a flower last week which he said was perfectly white when he gathered it on the previous day. It had withered in the meantime, and we are not able to corroborate Mr. Cannell from our own experience, but having previously stated in these columns that we have ourselves seen double white Hepaticas, there seems no reason for scepticism upon the subject. Mr. Cannell's flower was produced by a plant purchased upon the Continent last year. The question of a double white Hepatica was discussed by a correspondent in the *Gardeners' Chronicle*, April 15, 1899, p. 227.

From the following letter it appears that the variety has also bloomed in the Netherlands:—

"I have the pleasure to send you by this post sample flowers of *Hepatica triloba alba plena*, and think the following note may be of interest to your readers.

"The only stock, so far as I know, of this beautiful Hepatica, is now in full flower at our nurseries. The flowers have suffered a little from the bad weather of the last week, but when fully developed they are quite as large as the double-red variety, and larger than the double-blue. It comes from the Hartz Mountains, where years ago, when still a young lad, the son of a nurseryman found the plant growing wild. The whole stock has been cultivated from that single plant. *A. M. C. Van der Elst, Managing Director of the Royal Tottenham Nurseries, Ltd., Dedemsvaart, Netherlands.*"

ORCHID NOTES AND GLEANINGS.

CATTLEYA SCHRODERÆ.

THIS is one of the prettiest and most fragrant Orchids in bloom at this season, and apparently it is a good grower. It was originally thought to be a form of *Cattleya Trianaei*, but, like others of the *C. labiata* class, it has proved a well-defined subspecies. The flowers, which are always beautiful, vary considerably. In the gardens of Leopold de Rothschild, Esq., at Gunnersbury House, Mr. James Hudson, the gardener there, has been fortunate enough to secure a good example of the fine white *C. Schroderæ alba* out of a small number of fresh-imported plants. At present there is also in bloom there a fine example with large, pinkish rose-coloured flowers, with orange-coloured centre to the lip. Occasionally a form appears with some of the colouring seen in *C. Percivaliana*—a maroon-purple front to the lip. A flower with some indications of this kind is sent by Mr. A. Chapman, gr. to Captain Holford, Westonbirt; while H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr., Mr. Thurgood), has one which might be mistaken for a large, light-coloured *C. Percivaliana*.

ODONTOGLOSSUM × EXCELLENS COOKSONI.

In this plant we have a remarkably showy flower, possessing distinct features of *O. Pescatorei*, but with larger and broader segments. The sepals are bright yellow, with two or three large clusters of purple-brown blotches, the reverse side tinged with purple. The petals are pure white on the inner halves, and bright yellow on the outer ones. The white area bears five or six purple blotches, and the yellow part a cluster of larger spots. The labellum is broad, and white with a primrose-yellow tinge at the margin, and a cluster of red-

purple blotches in front of the yellow callus. The face of the column and wings are decorated with reddish-purple, and the margins of the side lobes have a few small spots of a similar colour.

It has flowered with Norman C. Cookson, Esq., Oakwood, Wylam, Northumberland (gr., Mr. Wm. Murray). *J. O'B.*

ODONTOGLOSSUM × LOOCHRIEENSE COOKSONI.

Yet another fine form of the natural hybrid of *O. triumphans* and *O. crispum* has appeared, and in the fine breadth of its segments and the showy display of its reddish-brown spotting, it will rank with the best of them. The sepals are of a bright yellow tinge, and marked with irregular groups of reddish-brown spots, the margins and tips being of yellow. The fringed petals are creamy-white at the base, and the other parts yellow, and they bear some small purplish-brown spots on the base, and some larger red-brown ones on the blade. The broadly ovate-shaped lip is fringed, and has red-brown spots around the yellow callus. Column white, tinged with brown on the lower part. The spotting shows through to the back of the flower, where it also has a purplish tinge up the middle of the sepals. It has flowered with Norman C. Cookson, Esq., Oakwood, Wylam, Northumberland (gr., Mr. Wm. Murray). *J. O'B.*

MURTHLY.

THIS fine estate and its extensive gardens belong to W. Stewart Fotheringham, Esq. The estate lies to the east of Dunkeld, on the banks of the river Tay; and here, on this picturesque spot, generations of owners have planted trees, many of which are now but relics of their former grandeur. Sir Douglas and Sir William Stewart planted numerous Conifers, which in the course of a hundred years have made surprising growth. The trees have been planted in large clumps, intersected with winding paths, along which the pedestrian meets ornamental steps, vases, seats, and summer-houses.

Around the castle, the walks and avenues of Yews, Araucarias, Douglas Firs, Deodars, and Limes, are arranged in straight lines. An avenue of ancient Yews is a particularly fine feature of this part of the grounds (see fig. 99, p. 265). Parallel to the Yew-tree avenue there runs a more open one of *Araucaria imbricata*, which leads from the castle to a chapel. The late frosts of 1895 greatly injured these trees, many of which had reached the coning age. Flourishing specimen trees of *Cedrus Deodara* are plentiful.

Abies Menziesii, in the matter of height, takes the lead with 106 feet; *A. nobilis* and *Pseudotsuga Douglasii*, with nearly 100 feet. There are specimens of *A. grandis*, *Tsuga Mertensiana* (*Albertiana*), *A. Nordmanniana*, of between 70 and 80 feet; and *Cedrus Deodara* and *C. Libani* of about 60 feet. With the exception of the Lebanon Cedars, which were planted probably about the middle of the eighteenth century, these trees were planted fifty or sixty years ago.

The Douglas Fir has been planted in masses, and they are very beautiful, healthy trees. There are but few Conifers which refuse to do well at Murthly, and the Silver Firs and *Pinus monticola* seem to be the only exceptions, the latter falling a prey to a species of fungus.

Fine examples of deciduous species of trees, such as Oak, Beech, and Chestnut abound. The two avenues of Lime-trees, numbering some hundreds, leading to the castle are so umbrageous that they are locally known as "tunnels." There exists also an avenue of much older date, viz., 200 years. The soil of Murthly consists of various loams, and the subsoil of gravel and clay. The altitude of the estate ranges from 100 to 300 feet above sea-level. Good examples of the curious inverted Spruce, *Picea inversa*, are found in the grounds, and the one illustrated (fig. 98, p. 263) is the best, its leader curving to the earth.

The gardens are under the care of Mr. James

Laurie, who pays great attention to the trees, of which only a very few are alluded to in this note. *D. S. Fish.*

[Details concerning the Murthly Conifers may be found in the *Conifer Conference Report*, p. 533 (1892); and in the *Garden*, May 19, 1900. A Banksian medal was awarded to Mr. Stewart Fotheringham for cut specimens and cones exhibited at the congress, together with some magnificent photographs. Ed.]

CAOUTCHOUC FROM THE CONGO.

WILKING OBTAINED—PROTECTION AND FOREST CONSERVANCY—VARIETIES OF CAOUTCHOUC—PREPARATION OF THE JUICE—PROPAGATION—MURTHLY AND ITS PLANTING.

ALMOST the whole of the caoutchouc exported from the Congo is obtained from climbing plants of the genus *Landolphia*, and some other Apocynaceous plants. Caoutchouc from some species of *Ficus* appears sometimes on the market.

The authorities of the Congo State have wisely decided that so valuable a product as caoutchouc should be protected from the inroads of traders and of natives, and that the trees should be carefully cultivated. King Leopold signed, in January, 1900, the necessary documents for the institution of a "Service de Contrôle Forestier."

This institution is of great importance from an economic point of view, and I may mention that the first results obtained by it have been highly satisfactory.

According to the regulations it is ensured, under the superintendence of this forest-service, that every individual who collects caoutchouc, be by law obliged to propagate either the Lianas or the trees yielding the rubber, according to the discretion of the superintendent of the district. Therefore societies of growers (and they are numerous in the Congo State) have so well recognised the profit obtainable by working on a large scale, as the new State regulation requires, that they expect a bright future, and have despatched many specialists simply to restock exhausted forests, and to increase the riches of the others. It is certainly remarkable in colonial annals, that a regulation made in January, 1900, and confirmed in March, should not merely be in action within that year, but that important Liana plantations should within that short time be under the control of the appointed agents.

Already the plantations in the equatorial district (among others) include 3,000,000 of these Lianas. When, in September, 1897, I left the Royal Gardens, Kew, for my duties in the Congo State, there was but little said concerning any extensive crops in equatorial Africa, except Coffee and Cocoa. Cultivation of Rubber-plants has come up wholly in the last two or three years.

VARIETIES OF CAOUTCHOUC.

In Congo there are four very distinct caoutchoucs of the *Landolphia* genus, besides the "des herbes" species (*Carpodinus lanceolatus* and *Clitandra Henriquesiana*, an allied genus), and three other species imperfectly determined. The "des herbes" caoutchouc is well known. The difficulty of collecting the rubber, and the impurity of it, renders it of little use. The other species are quite distinct; the one is white, the other is black, the third is rosy.

The white caoutchouc (called by the natives *Matofemongo*, and by other names, according to the village in whose vicinity it is procured), is a vigorous Liana, whose stem rarely measures as much as a foot in diameter. The fruit is round, and from about the size of a green Walnut to that of a large Orange. The skin is thin, slightly wrinkled, violet when young, yellow-red or bright red at maturity. The fruit contains from ten to thirty-two seeds, each surrounded by hairs, and filled with sugary-acid juice. The whole resembles yellowish-white mucilage. This is probably *Landolphia owariensis*.

The rosy caoutchouc is probably a variety of *L. owariensis*; it also is a sturdy Liana, the stem of which is sometimes 6 inches in diameter. It bears small, pyriform, yellowish-green or reddish-green

fruits, with, at maturity, a "nubby," wrinkled skin, and containing from four to twenty seeds, surrounded with yellowish-white hairs filled with acid juices. This yields the most valuable rubber; specimens quoted 4s. 5d. per lb. Native names for the plant are Bongew, Mongew, &c.

Black caoutchouc (Mondongo, Boole, &c.), or *Landolphia florida* var., is a sturdy Liana, the stems from 4 to 6 inches across, bearing round fruits, easily recognisable, as the seeds are surrounded with a blood-red viscous pulp. They number from four to ten.

ignorance of these facts that causes the production of inferior rubber. For instance, if the native gathers in his calabash the white and the black rubber, and submits them to the influence of the *Costus* juice, the white rubber coagulates, and includes the molecules of the black rubber with it, but remains always more or less viscous. Similarly, if the mixture is precipitated in boiling water, the black rubber coagulates immediately, but, as it encloses the white, the mass is depreciated in value. Thus merchants recommend that the different kinds be collected

above the milk, which coagulates immediately under the action of the acid juice. With the hands it is made up into a ball and firmly pressed until the rubber is all extracted.

It is noticeable that all caoutchouc coagulates naturally by simple evaporation if left in shallow vessels in airy and shady places. The product thus obtained is absolutely pure.

The caoutchouc Liana is found in all equatorial forests, whether these are inundated or not, and be the soil clay or sand. In the Congo (according to the botanist E. de Wildeman) are found *Landolphia Heudelottii*, *owariensis*, *Kirkii* var., *Klainii*, *lucida*, *florida*, and *florida* var. *leiantha*; *Carpodinus lanceolatus*, *turbinatus*, *ligustrifolius*, *leptanthus*; *Clitandra gracilis*, *myriantha*, *Mannii*, *Schweinfurthii*, *visciflua*, and *cirrhusa*.

Several ways of propagating have been tried, as by cuttings, layering, collecting seedlings, and seed-sowing. Cuttings are not successful except when managed by practised hands, under glass, and where there is bottom heat. I have seen thousands, and not one has rooted. Layering on a large scale is not practicable, as it is too slow a method.

As regards the collection of seedlings, it should be said that the ripe caoutchouc-fruits fall from a great height, and generally break in so doing. The seeds retain germinating power but a short time, and owing to the very moist atmosphere of the undergrowth, they germinate all together in the fruit, so that the fruits must be collected, and the young plants separated. This task must be performed trusted to natives, who would gather the whole of the seedlings beneath the trees, and so they would exterminate the young plants found in the forest.

The chief propagators of the caoutchouc Lianas are the apes, who swallow the ripe fruits whole, and the undigested seeds germinate perfectly afterwards. This I discovered through a native, when I asked him if certain species did not grow in dry as well as in inundated forests. He replied, "Do not the apes climb all the trees." Another unconscious planter is the native, who is also fond of the Liana fruit, so that frequently near a village small plantations arise full of caoutchouc Lianas accidentally established there.

MULTIPLICATION.

To turn from these casual acknowledged methods of cultivation, it may be said that the rubbers grow best from seed. The nursery must be made in the forest, in a space between fine trees that is large enough for the formation of several borders. No tree must be cut down, and there need be no large plantation in any one place. The borders must be fenced but not roofed, as the trees around afford sufficient shade. Each border should be about 3 ft. 6 in. wide, and of any preferred length, and several borders may be divided by narrow paths. If the ground is sloping, the length of the border should be parallel with the slope, and the plantation should be surrounded with a ditch, to keep the seeds from being washed away. The nursery can only be established when the fruits are ripe, unless the soil is not in a fit condition for the seed to be sown.

Fruits brought in by the natives are at once opened, and seeds are sown singly, thrusting them with the finger half an inch into the soil, and each seed half an inch to an inch away from its neighbour. I insist on the immediate sowing of ripe seed, as dry seed is useless. Unripe fruits become ripe if stored. Germination generally ensues in a fortnight, and when the seedlings have eight leaves they are easily transplanted. Seed in the nursery grows equally well as that *en place*; the fruits remain ripe for two or three months only. It is, therefore, advisable to gather as many as possible to be sown in an allotted space in the forest prepared for them.

PLANTING.

The nursery-ground made, and the seeds planted, the space to be allotted to the Lianas is marked out in plots of (say) 24 acres. A central avenue is to be made as straight as possible, and about 16 feet wide by half a mile in length. Of course, not a



FIG. 98.—*PICEA EXCELSA* VAR. *INVERSA* AT MURTHLY CASTLE. (SEE P. 262.)

The Congo caoutchoucs are remarkable for their purity. The natives coagulate the milk either by precipitation in boiling water, or by the addition of a very acid juice, which at once incites the collecting together of the molecules held in suspension in the milk. Thus are both the white and the red caoutchouc coagulated immediately by the addition of juice from a plant known in all the equatorial regions as *Bosasanga*, the *Costus* afer. A fine specimen, brought from the Congo in 1896 by Professor Laurent, of Gembloux, is in the Victoria regia house at Kew.

The rubber of the black caoutchouc, however, is not influenced by this material, and is only coagulated by precipitating it in boiling water. It is

separately. Other natives, instead of precipitating the mondongo in boiling water, simply boil the milk, thus forming a porous and elastic mass. Coagulation with *Costus* juice is practised thus: the milk flowing from the incisions is first collected in leaves left under the cuts, then gathered into calabashes and taken to the village. While one man cuts the *Costus* canes and strips off the leaves (it is a somewhat shrubby plant, sending up suckers from 3 to 6 feet high, and from $\frac{1}{2}$ to 1 inch in diameter), another man passes a piece of *Banana* leaf over the fire, rendering it wonderfully supple. A small hole is made in the ground in which the *Banana* leaf is laid and the milk poured into it. Three or four canes of *Costus* taken together are twisted

single tree should be sacrificed, only small branches being removed. Further, straight walks are made every 650 feet, measuring 16 feet wide and 1600 feet long. Thus are obtained plots of about 24 square acres each. If the forest is a very fine one, this area may be doubled.

When seedling plants, with eight leaves, are ready for moving, the men prepare a place in the forest with their hatchets, cutting down the undergrowth, but leaving all trees, old and young. They remove just enough brushwood to enable them to reach the foot of the trees. Experience has shown that 100 men can, in a day, prepare twenty-four acres of standard forest (*haute futaie*) suitably for the reception of *Lianas*. The forest is well adapted to a nursery ground, and is worked with a short-handled shovel, with which the *Lianas* can be transplanted without injury to the roots. The planters take with them vessels of water, into which they thrust the roots of the young plants. These pots, full of a certain number of specimens, are taken to one of the prepared squares, and there, with a dibber or shovel little holes are made round each tree for a specified number of the plants, which are set in up to their first leaves. The number of each group varies from two to twenty, according to the size and shape of the supporting trees. These trees are not so much to prop as to arrange the *Lianas*, which might otherwise choose a resting place more than 300 feet away. The plants are set some 12 to 20 inches from the foot of the trees, not in the fibrous earth generally found there to a certain extent, but in the actual and firm natural subsoil. Thus, there is a minimum of about 2500 *Lianas* for every 2 acres. After planting, the ground is supervised for two months, and when the grower has replaced any dead plants, and is certain that all are doing well, the forest is left to itself; in this consists one secret of caoutchouc growing. The plants require stagnant air saturated with damp, and should be disturbed as little as possible. They should be allowed to ascend to the tops of the trees, and after some years form a thicket impenetrable to the sunshine, thus destroying all the underwood. It is absolutely necessary to institute organised surveillance to guard against the depredations of natives and of animals who might destroy the trees and form new paths. No other precaution is necessary.

There is much difference of opinion as to when the caoutchouc may fitly be collected. I am disposed to say that the plants should not be disturbed before their tenth year.

The question of the number of *Lianas* to be planted to every 2 acres has little importance; from 2,500 to 5,000 is a fair estimate. Perhaps in the course of a few years some improved method of extracting the caoutchouc will be discovered, for if all the rubber could be drawn from the tissues of the bark and leaves, the yield would be trebled.

It is in the above-mentioned manner that we have, in equatorial Africa, established trial-grounds on the scale of 10,000 plants per 2 acres on 74 acres of the forest. Wherever this industry may be started, it will be found indispensable to keep strictly to a detailed plan on a scale of 1 to 5,000, for instance, made of the ground under cultivation. Guide posts are also to be recommended for use in forests thus utilised. *Louis Gentil, Inspecteur Forestier de l'Etat Independant du Congo.*

PLANT PORTRAITS.

HYACINTH MADAME VAN DER HOOP—Single white, introduced about 1840, and producing as many as forty-five flowers or "belts." *Florilegium Haarlemense*, t. 40.

MONBRETIA.—1, *Crocociniflora* 2, *Etoile de Feu*; 3, *Rayon d'Or*; 4, *Soleil Couchant*; 5, *Pottisi grandiflora*. These originated with Lemoine, of Nancy, who crossed *Crocociniflora* (*Tritonia*) aurea and *Tritonia* Pottsi, calling the cross so obtained *Monbretia crocaciniflora*. *Florilegium Haarlemense*, t. 42.

TULIPS.—1, *Zuivergele Pottebakker*, pure yellow; 2, *King of the Yellows*, darker yellow; 3, *Jacht Van Rotterdam*, purple flamed with white. *Florilegium Haarlemense*, t. 41.

ON THE CONFINES OF MAY.

WITHIN the last fortnight a striking transformation has taken place in our gardens. Very beautiful to the vision of the lover of Nature is the delicate green of the virginal leaves, the golden glow of the fragrant Daffodils, the tender gleam of the Primrose, and the odorous *Auricula's* varied hues. Many of the fairest forms of the *Narcissus* have already appeared. First came the English Lent Lily and the Scottish Garland Lily (*Narcissus scoticus*), rapidly followed by the great double Daffodil (*Telamonius plenus*), which has of late been very effective in the woods environing Logan House. Now we have several of the loveliest of the bicolors, such, for example, as *Empress* and *Horsfieldi*; also such splendid yellows as *Emperor* and *Sir Watkin*, which for garden decoration could not easily be surpassed. One of their sweetest companions is *Narcissus odoratus*, "the *Campernelle Jonquil*," one of the brightest, and assuredly the most richly fragrant of them all. The miniature single *Jonquil*, which grows with great vigour, and flowers most profusely in the lawn around this strongly-sheltered manse, is also a sweetly attractive flower. *Barri conspicuus* and *Narcissus ornatus*, which usually appear contemporaneously in my garden, will be in bloom in a few days; for they are already preparing to expand those flower-buds in which so much grace and fragrance lie concealed. *Myosotis alpestris Victoria*, the largest and most lustrous of all the *Forget-me-Nots*, is at a similar stage of development, and will doubtless unfold its precious floral beauties by the beginning of May.

The Rose-trees, stimulated by the recent alternating sunlight and beneficent rains, are beginning to grow vigorously. On many varieties, notably *Madame Joseph Combet*, *Killarney*, *Papa Gontier*, *Madame Pernet Ducher*, *Madame Pierre Cochet*, and *Clara Watson*, the newly-formed shoots, so contrasted in their hues, are highly artistic. From this embryonic period till their first fair flowers appear in June, it is extremely interesting to watch their evolution. Oriental and American Lilies, owing probably to the amount of moisture in the soil, are growing with great energy. Rapid growth is especially characteristic of *Lilium Henryi*, sometimes described as a "*Chinese speciosum*;" *Lilium candidum*, which in mild seasons is a veritable evergreen; *Lilium chalcedonicum*, the *Scarlet Martagon*; and *Lilium auratum* var. *platyphyllum*, which, though by no means the most richly-coloured of the gorgeous golden-rayed Japanese Lilies, is by far the most vigorous, and the most enduring. This is a consideration of great importance, for in some instances, or at least in certain situations, *Lilium auratum* is by no means long-lived. Perhaps, however, what "*rare Ben Johnson*" wrote long ago of men, may be in some measure expressive of beautiful, yet evanescent flowers:—

"It is not growing like a tree
In bulk doth make men better be;
Nor standing long an Oak, three hundred year,
To fall a log at last, dry, bald, and sere.

A Lily of a day
Is fairer far in May,
Although it fall and die that night,
It was the plant and flower of light."

Yet there is something very impressive in a noble old age, that has wrestled, like some venerable tree, for nearly a hundred years with all the manifold troubles and storms of life.

The supreme glories of this beautiful season are its flowering trees. In the South of England their blossoms come too early, and have adverse experiences; here the tender flowers of the Almond, the Plum, and the Cherry are only beginning to expand. In my own garden, the Almond-tree (*Amygdalus communis*) not only blooms with almost Oriental luxuriance; it also develops to its full dimensions its remarkable fruit. It does not, however, adequately ripen it in our Scottish climate, which is somewhat too cold; but it is of the greatest decorative value for its flowers, which, appearing

contemporaneously with other flowering trees, blend in exquisite harmony with these.

Ere long we shall have the memorable revelation of the Apple-blossom, the fairest gift of benignant May. *David R. Williamson.*

FLORISTS' FLOWERS.

THE TULIP.

ITS HISTORY—CHANGES OF FASHION—ADDISON ON TULIPS—TULIPS AND WATCH-DOGS—CULTURE—RAISING OF SEED-LINGS—BREEDERS "BREAKING."

THIS is probably the most celebrated of all our garden favourites grown under the designation of "florists' flowers," but it does seem that within the last decade or so the old favourites we loved so well, the *bizarres*, the *byblémens*, and roses, are being ousted to a certain extent by the selfs and fancies, just as the fine old flaked and bizarre *Carnations*, and the charmingly-edged white-ground *Picotees* have given place to a large extent to selfs, fancies, and yellow-ground *Picotees*; but the *Carnations* never caused the feverish excitement connected with the choice Tulips.

From the years 1634 to 1637, sober and level-headed Dutchmen were fairly demented about *Semper Augustus*, and a few other splendid varieties; but if we trace the history of the Tulip during the next 200 years, we are obliged to conclude that the matter-of-fact Englishman was not much behind his neighbour over the water. I happened to be reading Addison's papers recently, and came upon one I need not say amusing and interesting, for they are all that, but one published on Thursday, August 30, 1710, in the *Tatler*, gives much information on the Tulip fancy, and shows how much they were valued at that date. The entire paper might be published in the *Gardeners' Chronicle* with advantage to the gardening craft; but the following extract will show what the great essayist thought of a collection of Tulips he was permitted to visit. He says:—

"I was very much pleased and astonished at the glorious show of these gay vegetables that arose in great profusion on all the banks about us. Sometimes I considered them, with the eye of an ordinary spectator, as so many beautiful objects, varnished over with a natural gloss, and stained with such a variety of colours as are not to be equalled in any artificial dyes and tinctures. Sometimes I considered every leaf as an elaborate piece of tissue, in which the threads and fibres were woven together into different configurations, which gave a different colouring to the light as it glanced on the several parts of the surface. Sometimes I considered the whole bed of Tulips, according to the notion of the greatest mathematician and philosopher that ever lived, as a multitude of optic instruments, designed for the separating light into all those various colours of which it is composed. I was awakened out of these, my philosophical speculations, by observing the company often seemed to laugh at me. I accidentally praised a Tulip as one of the finest I ever saw, upon which they told me it was a common Fool's-coat; upon that I praised a second, which, it seems, was but another kind of Fool's-coat. I had the same fate with two or three more, for which reason I desired the owner of the garden to let me know which were the finest of the flowers, for that I was so unskilful in the art that I thought the most beautiful were the most valuable, and that those which had the gayest colours were the most beautiful. The gentleman smiled at my ignorance, he seemed a very plain honest man, and a person of good sense, had not his head been touched with that distemper which Hippocrates calls the *Tulipomania*, *Τυλιππομανία* [1]; inasmuch that he would talk very rationally on any subject in the world but a Tulip." Addison states that this "plain honest man" valued his bed of Tulips more than he would the best hundred acres of land in England, and it would have been worth twice as much but for his

foolish cook who mistook a handful of Tulip roots for a heap of Onions, and made a dish of pottage that cost him above a thousand pounds sterling.

Passing over another century and a quarter, fanciers were still in fever heat about their Tulips, and paying a hundred guineas for a bulb, and setting bulldogs to watch their beds. I fancy W. John Ball, still at Slough, told me he watched Tulip-beds at night with a dog or two for a grower who valued some of his bulbs at a hundred guineas each, half a century ago. Now it is easy enough to purchase far more beautiful varieties for half-a-crown a bulb, or less.

The culture of the Tulip is easy enough. There is no need to go to the expense that the fanciers used to think necessary. To make up beds 2 or 3 feet deep of turfy loam yellow and rich, a fourth part of leaf-mould, a sixth part

there are districts wet and very cold, and if it is intended to cover over the beds, it is better to do it by bending hoops of some kind, or any arrangement of sticks to support the mats or sacking that is thrown over them on frosty nights; but this must be removed whenever the protecting material is not needed. It is in the early bud stage that damage is likely to accrue to the plants from frosts, rain-water settles in the axils of the leaves; and if this becomes frozen hard something will be ruptured, either leaf or bud, and the choice florists' varieties are not so hardy as the original species. When I first grew Tulips, I had an arrangement of my own that I had never seen or heard of. The beds had a framework raised over them, higher at one side than the other; this framework was strong enough to support ordinary glass frame-lights, and these not only kept off the frost and superfluous

Tulip fanciers have boxes fitted up with square holes in which to place their Tulip-roots. I never had any such convenience, but merely put each variety when cleaned into flower-pots of sizes, and placed them on shelves in the fruit room; there they remained until planting-out time—about the end of October or early in November. My own experience in the south suggests that the best time to plant Tulips is about October 20, before any roots have appeared. I consider it a grave mistake to allow roots to form before planting, as they are sure to be injured in the process of putting them in the ground.

The Tulip enthusiast is also a raiser of seedlings. As in the case of Auriculas and other florists' flowers, the production of new varieties is the most interesting part of the florist's work. But the Tulip is even more instructive and interesting than



FIG. 99.—YEW AVENUE AT MURTHLY CASTLE. (SEE P. 262)

of horse-manure, an eighth part of sand, the "rich yellow loam" to be three parts; 2 or 3 feet in depth of this mixture would cost a deal of money, and would be worth preparing for bulbs worth 100 guineas apiece. I have grown choice garden Tulips to perfection in ordinary garden soil; and as for sandy soil being necessary, I grew them well on a stiff clay, but a good dressing of stable-manure was dug into it, and I used some sandy potting soil to place around the bulbs, and this raised the soil some 4 inches above the ground level. The ground was also well drained. This is of much importance, for the Tulip does not like a wet subsoil. Frost will never do any damage to the Tulip. I have known the frost penetrate to the bulbs without doing them any harm. I do not know how much frost the foliage will stand, but I have had it frozen as hard and brittle as glass without injury; better let the foliage in March and April take its chance, rather than cover it over too much to the exclusion of light and air. Of course,

wet, but admitted as much light as was necessary. The sides were protected by canvas screens when the Tulips were well developed. The leaves get sadly damaged if exposed to east winds in the early months of the year, but these vertical screens are sufficient to break the force of driving winds, even when accompanied by heavy rains.

The Tulip is in flower from the middle until the end of May, and at that time, if the glass lights are still used, as they ought to be, it is necessary to shade from hot sunshine, and in this way the bloom will last much longer. As the blooms pass away, break off the seed-pods, and soon the leaves and stems will become flabby. I ought also to add that as soon as the blooms fade, all the framework should be removed.

Some three or four weeks after blooming they are ready to be taken up, but not before the moisture is out of the stems and leaves. This can be ascertained by bending the stems round the finger; they would break if too full of sap.

any other, owing to the flowers of the seedlings nearly always appearing as self colours; and the self flowers break into flame or feather during a series of years. They may do this the first, second, or third year, or they may not break for a decade or so. They are most likely to break in a poor, rather dry soil. Maddock, in his *Florist's Directory*, published in 1792, gives an instance of forty "breeders" (as the selfs are termed) out of fifty, becoming broken or variegated in one season, owing to their being planted in dry, poor soil. Maddock preferred, also, to save the seed from the best of the breeders rather than from the flamed or feathered flowers. In that case, only such should be chosen as have perfectly-formed flowers, with clear yellow bottoms to the cup as in bizarres, or pure white as in the bybloemens and roses.

Apropos of variegation in Tulip flowers, I planted a hundred bulbs of *Tulipa Gesneriana* some fifteen years ago in a border, and they were left for quite ten years without any attention, and at the end of

that time three or four of them took on the feathered form, and kept it afterwards. The base of the cup in this case had the bluish-black tinge abhorred by the florist, and a certain mark of disqualification. The early Dutch Tulips frequently break into the feathered state. One of the prettiest is a feathered Proserpine; but there are several others now in commerce, and very beautiful they are. *J. Douglas.*

BERLIN.

THE BOTANIC GARDEN.

It is well known that the site of the Royal Botanic Garden at Berlin has been changed, and with this the large rockery, which will be one of the main features of the new garden, as it has an area not surpassed by any other, even that at Kew. It is a picturesque construction, made at different levels in the new garden. In its construction, the different rocks are chosen according to the geological structure of the different mountains. It is not a rockery in the common sense of the word, but a geographical arrangement of the plants of the mountains of the world, and even of the vegetation of the cooler climates of the whole world. A good many guides will be necessary for the explanation of this large rock-garden. The first is now issued as an appendix vii. of the *Notizblatt des Kgl. botanischen Gartens und Museums zu Berlin*, under the title, *Die Pflanzenformationen und die pflanzen geographische Gliederung der Alpenkette, erläutert an der Alpenanlage des neuen Königlichen botanischen Gartens zu Dahlem-Steglitz bei Berlin, mit 2 Orientierungskarten von A. Engler.* (*W. Engelmann in Leipzig. 2 mark 40 pfennige.*) This work will be of great value to all those who have rockeries, as well as those who make excursions in the Alps. After a short introduction, Dr. Engler, who for the last thirty years has paid yearly visits to the mountains of Europe, and has an excellent knowledge of them, describes the formations of the northern low hills and the mountain region of the northern limestone mountains. He distinguishes here no fewer than nineteen different formations of vegetation.

The next chapter contains the wood formations of the pre-alpine, sub-alpine, and alpine regions of the northern limestone mountains and the Central Alps. Here are distinguished eleven formations.

In the third chapter, the meadows and meadow-like formations, as also the rock-formations of the northern and central limestone mountains, are described. Here the author distinguishes nineteen formations.

The fourth chapter gives a description of the different districts of the northern limestone mountains, Central and South-west Alps. Fourteen districts are distinguished.

The fifth chapter deals with the formation of the southern limestone mountains. Here also nineteen formations are distinguished.

The sixth chapter gives a description of the different districts of the southern limestone Alps, viz., ten.

The seventh chapter is an historical one. Here are shown the main stages in the history of alpine vegetation, beginning from the younger tertiary.

In an appendix, the leading ideas of the author concerning the distribution of plants in our times are reprinted from his larger work, *Versuch einer Entwicklungsgeschichte der extra tropischen Florengebiete der nördlichen Hemisphäre.* The work will afford landscape gardeners and amateurs so many hints, that it may be ranked as a standard work for makers of rockeries. *Dr. Dammer.*

THE WEEK'S WORK.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. I. MEASURES, Esq., Cambridge Lodge, Flodden Road, Camberwell.

Phalenopsis.—There are few finer Orchids than *Phalenopsis*, whether species or hybrids. The plants are usually considered by gardeners as being difficult to grow, but with this contention I do not agree, for when the position in the glasshouse is found that suits their requirements, few other species of plants flower more abundantly. One sometimes meets with specimens of the species that

have been longest under cultivation in this country thriving luxuriantly in an ordinary plant stove, with no special knowledge of Orchid-culture on the part of the gardener. Frequently these are potted in a compost consisting principally of peat, which perhaps has not been renewed for years. This indicates that no difficulty needs be experienced in the cultivation of *Vandas*. *Phalenopsis* commence to make new roots in April or early in May, when repotting should receive attention. If the aged roots are attached to the basket and the baskets are sound, do not detach or disturb the roots more than is really necessary, but remove the crocks and decayed compost, using for the purpose a pointed stick; then cleanse the roots and the rest of the drainage of all traces of the compost by immersing the basket entire in a pailful of lukewarm water; put in clean crocks as drainage, and fill up the rest of the space with chopped sphagnum-moss in a live state, the close-growing, thick-stemmed moss being the best for this purpose, and make this moderately firm at the base of the plants. Having finished the potting, afford warm rain-water copiously. Where baskets get decayed, thoroughly moisten the whole, which will allow the roots to be easily detached from the wood, and then proceed in the manner described. Afford abundant shade to disturbed plants till the roots push in numbers into the compost, and afterwards light may be afforded in moderate amount, but never to the direct sun's rays in the summer time. During that season the plant should have the necessary amount of warmth, and a humid state of the air, so that growth may be free and strong. Scale and thrips are the most troublesome insects which infest *Vandas*, the former being removable with a soft sponge and warm water, and the latter by fumigation once a fortnight. A small quantity of flowers-of-sulphur, placed in the heart of the plants a few hours before the house is fumigated, will drive out the thrips from their hiding places, when they are more readily destroyed by the fumigation. Plants of *Phalenopsis Lowii*, a deciduous species of small growth, are now starting into growth, and they may be similarly treated to the above. It should, however, be remembered that it requires but little material of any description when the roots have become established, and it is inadvisable to disturb them. The plants should be placed in a position where they do not become dry too quickly during the growing season.

THE FLOWER GARDEN.

By T. H. SLADE, Gardener to Lord POLTIMORE, Poltimore Park, Exeter.

Hydrangea Hortensia.—This handsome plant, although in most gardens grown in pots or tubs, as figured in a recent issue of this journal, will, in the milder counties, succeed as a bush in the open air, and attain to a large size. In order to flower the plant successfully out-of-doors, a deep, well-tilled soil, a sunny spot, and a somewhat sheltered position should be chosen, and in such it forms a beautiful object, flowering freely if the shoots are pruned hard. If the shoots are kept thin, they become well ripened, and unless this occurs, flowers are few in number. In low, damp situations it also grows strongly, but fails to flower freely. *Hydrangea Hortensia*, H. H. Otaksa, H. H. stellata, and H. H. Thomas Hogg, are good varieties for growing outside.

Hydrangea paniculata grandiflora.—The pruning of this species must not be longer delayed. It is not too late for planting H. *paniculata* if it has been cultivated in pots, and the young shoots have not made much growth.

Camellias are hardier plants than many gardeners imagine, growing and flowering out-of-doors in the southern coast counties, more especially along the south and west. Some which I have planted at Poltimore Park grow well, but being too much in the shade, they do not flower well. The land for the *Camellias* should be well drained, open to the south or south-west, and sandy loam in which to grow is the most suitable. The *Camellia* is well suited for covering north, south, and west walls in the warmer counties. C. *imbricata*, C. *Chandleri*, C. *elegans*, and C. *Lady Hume's Blush*, are good varieties for open air culture; the white varieties will also thrive, but they are not so suitable for the purpose, as like most white flowers grown out-of-doors they are quickly damaged by the weather. [Seedlings having single flowers are most profuse bloomers, and well worthy of a place out-of-doors. ED.]

Violets.—The double-flowered varieties *Marie Louise*, *De Parme*, *Swanley White* (*Comte de Brazza*) may now be taken up, and the stronger best-rooted runners replanted in lines at 12 inches apart in land manured with leaf-mould or similar mild substances. If the double-flowered varieties are intended for frame culture in the winter, a slightly shady position will suit them; but if the plants are for flowering in the open air, the position of the beds or lines should be sunny, and the plants afforded water abundantly in dry weather. Red-spider is often troublesome in hot, dry soils, and to keep this pest in check, a mulch of half decayed leaves or spent Mushroom-bed dung, and syringing of the leaves on both sides are suitable means. The plant should be kept clear of all runners during the summer time. The single flowered *Violets* may be planted if they have ceased to flower. These may have a distance of 18 inches between the rows, and should be planted in a fairly open and sunny position, for if much shaded the plants run to leaf greatly, and show but few flowers. *California*, *Princess of Wales*, *Princess Beatrice*, and *La France* are all good, and do not differ much in colour; but some have larger flowers and longer stems, two good points in which the variety *La France* excels. Mrs. Astor is more purplish in colour, and not a favourite with everyone.

Sweet Peas.—Another sowing may be made. The early sowing is not making rapid growth, and in some gardens many of them will have been destroyed by slugs.

THE HARDY FRUIT GARDEN.

By C. HERRIN.

Disbudding Peaches and Nectarines.—With the advent of sunny days, Peach and Nectarine-trees on the warmer aspects must soon receive their first disbudding. This operation must be performed by degrees, taking a few at a time at intervals of about a week. First take those buds which are at the back or on the lower side of the shoots. In the case of old, well established trees, it will suffice to leave a bud on the upper side at the base of the shoot, and another at the tip, when the trees are finally disbudded. As the main branches of a Peach-tree usually are trained like the ribs of a fan, buds which will become shoots if they are left on the upper side of the fruiting shoots of the current year, facilitate the laying-in, and give a tree a workmanlike appearance, and obviate the crowding of the foliage. Fruiting-spurs in moderate number may be formed by pinching some of the shoots at a later date, leaving at the most two or three leaves. These are, another year, sure fruiters, and even in houses where trees are sometimes addicted to bud-dropping, they are often retained on these spur-growths. Crowding of shoots must be avoided, and no more shoots be allowed to remain than can be afforded sufficient space to be nailed in with their foliage clear of existing branches. The buds on young trees should not be removed in a wholesale manner, as many will be required for the production of shoots wherewith to furnish the trees. The disbudder should endeavour to secure a framework of well-placed branches, with sufficient minor growths to fill in between these in a short space of time.

Planting of Outdoor Vines.—More attention has of late years been paid to out-of-door Vines, and the summers having been generally hotter, the fruit has ripened better than usual, i.e., where cultivation has been of the right sort. The successful fruiting of the Grape-vine out-of-doors in this country rests upon the thin training of the shoots, so as to get them well matured, to timely disbudding, to the laying-in of new shoots, and the removal of aged and barren ones. The Vines should have good holding soil in which to grow, and be liberally manured by top-dressing, and in other ways. The bunches of Grapes form a useful addition to the dessert if the berries have been thinned and the fruit is thoroughly ripe. The planting of Vines may be carried out this month, and where the soil of a fruit-border is in fairly good heart, but little further preparation will be necessary, providing the drainage is good; a rather dry situation being preferable to a damp one. Where the staple is of this nature, a dressing of lime-rubbish and bone-meal may be incorporated with it; but in the case of unsuitable, bad or poor soil, it should be excavated to the depth of 2 feet, a drain provided at a still lower depth if necessary, and a border formed with turfy-loam, lime-rubbish,

wood-ashes, and some brick-rubble, with or without any of the staple being returned, as may seem desirable. The whole should be trodden firmly, and allowed to settle before the planting is done. A Vine-border may be anything between 4 and 6 ft. in width. The warmest aspect should always be given to Vines, the southern gable-ends of dwelling-houses, sheds, &c., offering suitable places. In planting, shake the soil from the roots, spread out the latter, and cover them with the finer particles of the soil, fill in, and make quite firm; a mulch of half-rotten manure may be afforded, and if the soil is in a moderately dry condition at planting-time, water should be copiously afforded a few days afterwards. The varieties Sweetwater (common and Parsley-leaved), Black Hamburg, Black Cluster, and Reine Olga, are suitable for growing out-of-doors in this country.

FRUITS UNDER GLASS.

By MAJ. J. M. MCINTYRE, Gardener to Sir CHAS. TENNANT The Glen, Innerleithen, Peeblesshire.

Melons. Early Plants.—When the fruits begin to ripen, lessen the supply of water at the roots, but not to such a degree as to distress the plants. It is not unusual to take a second crop of fruits when the foliage has been kept clean and healthy, and the roots are in good condition. This, however, is not a desirable practice, and the better way is to have young plants ready to take the place of those that have borne a crop. Withhold atmospheric moisture, and provide for a circulation of dry, warm air, increasing the temperature to 70° or 75° artificially, and one of 80° to 90° with sun-heat. Remove the fruits from the plants before they are very ripe, removing them to the fruit-room for two or three days, or until they are in proper condition to send to table. Cracked fruits are produced by a close and moist atmosphere, and by too much water at the root—conditions which induce the formation of an excessive quantity of sap. If any fruits show a tendency to crack, cut the shoots about half way through with a sharp knife a few inches below the fruits, in order to check the flow of sap, and afford less water at the roots and less humidity in the Melon-house, affording slight ventilation constantly, in order to prevent moisture condensing on the fruit.

Succession Melons.—The present is a good time to plant Melons in pits or frames, whether the former are heated with hot-water pipes or not. It is advisable to provide bottom-heat by means of a bed of stable-manure, or a mixture of tree-leaves and stable-manure, though this can be dispensed with if there are bottom-heat pipes. The plants should be brought well up to the glass, which can be done by means of a temporary trellis, if necessary; the bine being trained over these, and the fruit raised to the light. Where there are bottom-heat pipes only, these must not be wholly covered with soil, or the Melon plants may be put into pots, tubs, or boxes. The plan of forming a narrow enclosure along either the front or back by means of loose bricks is a good one. As a soil, use strong loam one-half, and make up the other half with road-scrappings and a sprinkling of lime and bone-meal. When the compost is warmed throughout, the Melon plants may be planted to the number of two to each sash, and the soil made firm about the roots. Do not stop them till they have nearly crossed the lights, that is to say, have travelled from the front to the back, or *vice versa*, the fruits being obtained as much as possible from the lateral growths, which ought to be stopped at the joint beyond where the flowers show. The more common practice, and the plan that most gardeners adopt, is to fill the pits with well-prepared heating material, making it somewhat firm, and of sufficient depth to bring the soil placed on it up to within 8 or 9 inches of the glass. The material being at the proper temperature, about 2 bushels of the same compost as mentioned above is placed in a flattened heap in each light; when this is warmed throughout, and there is no longer any danger from the overheating of the bed, the Melons are planted as before, one facing to the back, and the other to the front. Plant them rather high, yet in a sloping direction, so that the shoots may be readily pegged down. The shoots are stopped at the second or third joint, and the branches resulting laid in thinly, not stopped till they have nearly reached the walls, the breaks from these giving fruit in abundance. Before the plants have made much progress, more soil is added to the heaps, a layer about 6 inches deep being gradually laid on. The

temperature ought at no time to fall much below 70°, this being increased 5° or more with sunshine or air. Air is given soon after the sunshine has reached the pit, and draughts are carefully avoided. The frames are closed early in the afternoon, the plants being then syringed, also the walls; and coverings of mats, &c., are put on the lights in the evening. The soil is never allowed to become very dry.

Cucumbers.—Those plants that are growing in artificially-heated houses should be syringed twice a day. Plants growing in hot-bed frames and pits will not need syringing so often, simply a light spraying at closing time sufficing on bright days, and not any in dull weather. Afford plants in all bearing frequent and liberal applications of liquid-manure at a temperature of 75° to 80°. Avoid over-cropping and the over-crowding of the shoots. If very straight fruits are in request, glasses should be placed on them as soon as they are a few inches long. Attend to stopping, thinning, and tying, keeping a succession of fruitful growths. No more fire-heat should be used than is absolutely necessary; and with the reduction of fire-heat, moisture will need to be reduced correspondingly. Make another planting if necessary, so as to maintain a supply of fruit exceeding rather than unequal to the demand.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HUSSEY PACKE, Esq., Prestwold Hall, Loughborough.

Stove Climbers.—Tie and regulate the young growths of these plants as occasion may require, never letting them get into a tangle of shoots. Thin out the weak shoots of *Passiflora racemosa* and other species, tying in loosely the stronger shoots in such a manner as to permit of their blooms being displayed effectively. The quaint flowers of *Aristolochias* are always attractive, *A. elegans* being a very popular species. These should have free extension so as to fully display their curiously-marked flowers. *Jasminum gracillimum*, *Ipomoea Horsfalliae*, and *Thunbergias* which have flowered during the winter and spring months, may now be pruned, removing the shoots that have borne flowers, and the superfluous growths, thereby encourage the vigorous growths for future flowering. Disbud the weak growth of *Allamandas* and *Bougainvilleas*, and pinch out the points of gross shoots if they show signs of premature flowering, and retard the time of flowering by a month or six weeks. Specimen plants of *Stephanotis* and *Dipladenias* should have the young growths trained in a manner best done by affording them a position near the glass, and by training every shoot on a piece of string. As the plants approach the time of flowering, take them carefully down from the roof, train on wire balloons and remove to a cooler house. *Smilax* may now be cut down and the plants repotted, or the roots planted out at the foot of a wall, the young growths trained up bouquet-wire. These will be found useful for table decoration during the autumn and winter months.

Hanging Baskets.—A sufficient number of these furnished with suitable plants to keep the stove, greenhouse, and conservatory supplied from now onwards should be provided. *Hoya bella* and *H. Paxtoniana*, *Asparagus Sprengeri*, and the different varieties of *Achimenes*, make effective basket plants. The latter are now sufficiently advanced to be placed in baskets forthwith. Let the baskets first be lined on the inside with green moss, and commencing at the bottom insert through the interstices of the wire work young *Achimenes* in tiers at distances of 2 to 3 ins. apart, filling up the basket with soil as the work proceeds, and finish by filling in the centre with strong plants. Apply sufficient water to moisten the whole of the soil, and hang up at the cooler end of the stove, syringing them daily, and affording water when it is required. When quite established and about to flower, apply occasionally weak liquid-manure. The plants should be inured by degrees to the cooler temperature of the conservatory. For filling greenhouse baskets, the Ivy-leaved *Pelargoniums*, *Torenia*, and the white and blue varieties of *Campanula isophylla* are excellent subjects. *Begonia Gloire de Lorraine* is another effective plant. *Tropeolum Vesuvium*, *Lobelia speciosa* and *L. Paxtoni*, and *Mesembryanthemum cordifolium variegatum* make useful edging plants, and afford contrasts of colour to other stronger-growing plants.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bicton, East Budleigh, Devonshire.

Cabbages.—In order to afford a succession of Cabbages to those raised from seed sown at the end of the month of February or early in March, make a sowing in the open of *Ellam's Early* or *Sutton's Little Gem*, two excellent varieties for coming into use in the months of August and September. Before planting out the seedlings of the first sowing, harden them off perfectly, and when planting let them stand 15 inches apart. The ground should have been well manured and deeply dug, and the plants should be made firm in it.

Turnips.—Fortnightly sowings may be made from this date until August, and as regards varieties, *Veitch's Red Globe* is excellent for present and future sowings. Turnip land should be rich, and as a manurial dressing for light soils nothing excels rotten farmyard-manure, and for heavy land the same, in a decayed condition. Sow the seeds in drills 2 inches deep, drawn at 15 inches apart. The ground should be made firm and level, and be raked and rolled with a light wooden roller when sown. Sprinkle frequently with fresh soot and wood-ashes, to ward off attacks of the Turnip-flea; space out the plants at 4 to 6 inches apart as soon as they are in the first rough leaf. Let the land under earlier crops be hoed after thinning the plants to 4 inches apart.

Leeks.—The plants from sowings made in February should be planted out after due hardening off in trenches prepared as for Celery, or by making holes with a dibber 6 inches deep on the flat, and allowing just enough soil to fall in as will cover the roots. A distance of 9 inches apart each way will be sufficient. Seed sown at this date will afford a crop late in the year.

Tomatos.—The plants of the February sowings being now growing in 5-inch pots will be fit for transferring to 10-inch ones. As a potting soil use turfy loam, a small sprinkling of fresh soot, and bone-meal; pot firmly and place in a house or pit kept at a temperature not lower than 55°, train the stems near the glass, and if the crop is to be cleared early, allow each plant one stem with from four to six clusters of fruit, and these being obtained nip out the point. Tomatos may be grown in boxes 15 inches deep and wide. Let all side-shoots be removed, and apply manure as soon as the roots permeate the soil. Tomatos for planting out of doors should be kept near the glass in an unheated pit, and sheltered from cold winds; do not let the plants lack water at the roots.

Lettuces.—Sow seeds of *Cos* and Cabbage varieties every third week until August, and if practicable, sow where the plants are to remain in shallow drills 10 inches apart, and leave the plants at the same distance apart. Tie up when the leaves are dry any *Cos* varieties that have stood out the winter and are far enough advanced; expose as much as possible those dibbled out under glass a month since, preparatory to planting out on a warm border in a few days time, affording water immediately if the soil be dry.

Beans (Dwarf and Runners).—In the warmer counties small sowings may be made of the former at 2 feet asunder and 3 inches deep, choosing a warm sheltered border that has been manured and well tilled. Runner Beans may be sown in drills 12 feet apart, the intervening spaces being cropped with Lettuce, Turnips, or Spinach, the slight shade afforded by the Beans doing these no harm. *Veitch's Early Favourite* and *Ne Plus Ultra* are good dwarf kinds for sowing now, while *Mammoth Scarlet*, *Al*, and *Best of All*, are hard to beat. Among Runner varieties sow two lines of seed in a drill, dropping the seeds at 6 inches apart each way; or sow thickly, and thin the plants to that distance. As soon as 4 inches high, draw up the soil to them, and guard against slugs by dusting the rows with quicklime.

Radish, &c.—Sow thinly once in three weeks. A north border is best for a Radish-bed from the middle of May till August. Mustard and Cress should be sown weekly, shading the beds with mats until the seed germinates.

Brussels Sprouts.—It is advisable to make a sowing at this date, for although the plants may not be quite so robust as those from the early sowings, the sprouts are firmer, and withstand frost better.

Spearmint and Peppermint.—Make a new plantation, choosing shoots 4 in. long, with roots attached, dibbling these in at 6 in. apart each way.

APPOINTMENTS for the Month of MAY.

THURSDAY,	MAY 2	—Linnean Society, Meeting.
SATURDAY,	MAY 4	—Royal Botanic Society, Meeting.
		Royal Horticultural Society's Orphan Fund (Annual Dinner at Hotel Cecil).
TUESDAY,	MAY 7	Royal Horticultural Society's Committee, Meeting at Westminster (Presentation of V. M. H. and Veitch Memorial Medals).
WEDNESDAY,	MAY 15	—Whitsun Day (Scotland).
THURSDAY,	MAY 16	—Royal Botanic Society, Meeting.
TUESDAY,	MAY 21	—Kew Guild Annual Dinner.
		Royal Horticultural Society's Show in the Temple Gardens (3 days).
WEDNESDAY,	MAY 22	Gardeners' Royal Benevolent Institution (Annual Dinner at Hotel Metropole).
		Birth and West and Southern Counties Show at Croydon (5 days).
FRIDAY,	MAY 24	—Linnean Society, Anniversary Meeting.
SATURDAY,	MAY 25	—Manchester Orchid Exhibition commences—closes May 30.
MONDAY,	MAY 27	—Bank Holiday.
WEDNESDAY,	MAY 29	Société Nationale d'Horticulture de France, Spring Show at Paris—closes June 3.

SALES FOR THE ENSUING WEEK.

MONDAY NEXT, at 12 o'clock.—Stove and other Ferns, Palms, Lilies, Spiræas, Perennials, &c., at Protheroe & Morris' Rooms.

TUESDAY NEXT, at 12.30.—Important Sale of Oakley Park collection of Orchids, by order of A. W. Hay, Esq., at Protheroe & Morris' Rooms.

WEDNESDAY, MAY 1.—Palms, Pot Roses, Ferns, Azaleas, Hardy Perennials, Aspidistras, Begonias, Lilliums, Stove and Greenhouse Plants, at 12.30, at Pollexfen & Morrison's Rooms, Pilgrim Street, E.C.—Lilies, Carnations, Begonias, Gladioli, Border Plants, Ferns, Palms, &c., at Protheroe & Morris' Rooms, at 12 o'clock.

FRIDAY NEXT, at 12.30.—Imported and Established Orchids, Palm Seeds, Iris, Tuberoses, &c., at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick—51°.

ACTUAL TEMPERATURES:—

LONDON.—April 24 (6 P.M.): Max. 70°; Min. 52°.

April 25.—Fine, easterly wind, warm.

PROVINCES.—April 24 (6 P.M.): Max. 58°, East Counties: Min., 46°, N.E. Scotland.

A LARGE majority of the Fellows present at a crowded meeting on Tuesday last adopted the amendment to the Council's proposal, formulated by Mr. ARTHUR SUTTON, and declared that the acquisition of the site at Farningham was not the best means of celebrating the forthcoming Centenary of the Royal Horticultural Society. The practical question to be dealt with was this:—The Council had taken great pains and trouble to investigate the merits and advantages of many sites offered them for the purpose of replacing that at Chiswick. Of those sites they considered that at South Darenth, near Farningham, as the best, and as in many respects an advantageous one. It was for the Fellows to decide whether they were in favour of its adoption or not. The answer was most decidedly in the negative. Everyone feels grateful to the Council, which is one of the strongest, most representative, and best of modern times for what they have done for the Society; nevertheless, but few, if any, of the outside Fellows could be found to support this particular scheme. The case was opened, on behalf of the Council, by Mr. HARRY VEITCH in a speech in which the case from the Council's point of view was clearly and admirably set forth. The scheme, however, had no chance against the torrent of destructive criticism poured upon it by the several speakers, and in the very important letter of Sir WILLIAM THISELTON-DYER, portions of which were read at the meeting, and the full text of which is incorporated with our

report. Eventually, seeing how large was the majority of dissentients, the President determined not to resort to that most obnoxious expedient, the proxy vote. We had hoped this had been for ever abolished, but in the confusion of last year's meeting it was again enacted. The Fellows have now had an instructive object-lesson, showing how great its demerits might be, especially in a case like this, where there would have been no time to counteract the poison by the administration of a suitable antidote. Happily all this has been avoided, for the President, with graceful tact, bowed to the "mandate" of the Fellows present, and withdrew the obnoxious proposal. Sir TREVOR LAWRENCE has often shown himself to be not only chairman of the Council, but President of the whole Society, but never more conspicuously so than on the present occasion, and the most cordial thanks are therefore due to him from the Fellows.

For the time, the appalling danger has been averted. What is to come next? The vote of Tuesday by no means precludes the acquisition of a smaller garden in a more suitable site, and at less financial risk; but as we have Chiswick for about twenty years, there is no need to act hastily in that matter. It is clear that the feeling of the meeting was very markedly in favour of a Hall to replace the crowded and inconvenient Drill Hall. The difficulties, financial and otherwise, are very great, but assuredly they are not insuperable, and if the Fellows will act with the same spirit with which they shouted, success is certain! Several handsome offers were indeed made in the room. We shall be delighted to chronicle others.

ROSE CATHERINE MERMET (Supplementary Illustration).—Our illustration affords a good idea of the beauties of this favourite Tea Rose, raised by M. GUILLOT, in 1870. Its flowers come solitary, and are always pendent, making it an admirable Rose for covering the pillars and roofs of conservatories and Rose-houses. The flower is a shade of rosy-flesh, with just a suspicion of salmon-red at the base of the petals. The blooms shown were selected by the late T. W. GIRDLESTONE, and photographed by Mr. BYRNE, of Richmond, Surrey.

LINNEAN SOCIETY.—On the occasion of the evening meeting to be held on Thursday, May 2, 1901, at 8 P.M., a paper will be read on "Studies in Heterogenesis," by Prof. H. C. BASTIAN, M.D., F.R.S., F.L.S., &c.

BRITISH BOTANY.—The *Journal of Botany* for the present month contains, among other interesting articles, one on "British Botany in the Nineteenth Century," by Mr. W. A. CLARKE, in which a brief summary is given of the principal publications relating to our native flora which were issued during the period in question.

BOTANICAL SURVEY OF SCOTLAND.—The late ROBERT SMITH, of Dundee, a pupil of Prof. FLAHAULT of Montpellier, undertook the investigation of the Scottish Flora from the point of view of botanical geography. A map of the country round Edinburgh prepared by him is now published by JOHN BARTHOLOMEW & Co., of Edinburgh. The country is divided into the littoral region, the region of cultivation, and the region of hill pasture and moorland, with their subdivisions, which are indicated on the map by distinctive patches of colour. The littoral region is characterised by submerged plants, including *Algae* and *Zostera*, plants inhabiting salt marshes, sandy shores, or dunes and rocks. The region of cultivation is divided into two subregions, in one of which Wheat is cultivated, whilst in the other Wheat-growing is not

practised. The object then is to represent and compare the existing associations of plants as brought about by climatal and other conditions, uninfluenced by man's agency or modified by it as the case may be. The work was begun by Mr. ROBERT SMITH, and will be continued by his brother, Dr. W. G. SMITH, of the Yorkshire College, Leeds. Those who think that no more remains to be discovered about British plants will be pleasantly disillusioned by a perusal of Mr. SMITH's paper and by a study of the map which accompanies it.

MRS. BAKER.—The deepest sympathy of his numerous horticultural and botanical friends will be extended to Mr. J. G. BAKER, F.R.S., of Kew, who on Saturday last experienced the grief of losing his wife. Mrs. BAKER had been suffering from an incurable malady for several months, an operation which was performed in the course of last summer having only been temporarily successful.

THE NATIONAL CHRYSANTHEMUM SOCIETY'S Annual Report for last year, and the Schedule of prizes to be offered at the exhibitions to be held in 1901, now before us, contains a mass of information that will be useful to exhibitors of this flower. The account of the visit of a deputation to the Paris show is interesting, and the event appears to have been attended with much success. The work of the classification committee, albeit an arbitrary one, is needful, and the result of its deliberations to date are recorded. Exhibitors may therefore know in what sections difficult varieties are permitted to be shown, and they are told also that certain varieties are too much alike to be shown as distinct. The annual outing is announced to take place "early in July," the place to be visited being Downside, Leatherhead, the residence of Mr. ALFRED TATE. The dates of the exhibitions will be October 8, 9, and 10; November 5, 6, and 7; and December 3, 4, and 5. They will be held as usual in the Royal Aquarium, Westminster. Non-members of the Society may exhibit on payment of an entrance-fee of 5s. The Secretary is Mr. R. DEAN, Ranelagh Road, Ealing.

PORTMAN MARKET.—On Thursday, April 18, Mr. BOULNOIS, M.P., the Mayor of the Borough of Marylebone, formally opened the new Portland Market, situate in Church Street, Edgware Road. We have already referred to this most recent development in market enterprise.

SALES.—Among the announcements of approaching sales which have reached us, we note specially that of the fine collection of Azaleas, Tree Ferns, and Palms, formerly belonging to the late Countess DE KERCHOVE DE DENTERGHEM, at Ghent. The sale will take place on Wednesday and Thursday, May 1 and 2, at 9 A.M., under the direction of M. JULES DE COCK. On Tuesday, April 30, the collection of plants belonging to M. GHELLINCK DE WALLE will also be disposed of by public auction. The break up of these two splendid collections will come as an unwelcome surprise to those on this side of the Channel.

STREPTOSOLEN JAMESONI.—There are four plants of this beautiful greenhouse plant at present growing in beds in the Conservatory, Kew. Two of these are in loam exclusively, and two others have peat. Those in the loam are blooming very much more freely than the others. If the use of pure loam will always have the same result, this information will be valuable.

THE DAFFODIL KING was last heard of in the New Hebrides. We are not aware that there are any Daffodils there, indeed we suspect there are not, but if there are any, Mr. PETER BARR may be expected to find them.

GREENHOUSE PLANTS AT ROYAL GARDENS, KEW.—The conservatory (No. 4) contains a floral display richer even than usual. The new hybrid *Primula*, *P. kewensis* (*P. verticillata* × *P. floribunda*), is still in full beauty, some of the flower-stems being more than 18 inches high. It is a most valuable garden plant, and the sooner it

becomes possible for us all to obtain a plant the better; but Mr. Garrett informs us that this hybrid, like so many others, has until this date, at any rate, failed to produce good seeds. Seedling *Hippeastrums* raised at Kew include some with large, richly coloured flowers of good form. Bulbous plants, including Tulips, *Fritillarias*, &c., are well represented; but the principal colour is obtained from specimens of the rich collection of hardy shrubs for which the garden is famed. *Rhododendrons*, *Spiræas*, double Lilacs, *Itea virginica*, an uncommon North American shrub, with small white flowers; and *Wistaria sinensis*, grown as standards, were amongst the most conspicuous. Large plants of *Eupatorium adenophorum*, bearing an abundance of white flowers, are placed at intervals on the centre beds, and *Fuchsias*, among other plants, display their variously coloured pendent flowers from the roof. The very beautiful *Streptosolen Jamesonii* upon several pillars is flowering freely. *Acacias* are nearly past, but *Cinerarias* make a grand show, and quite a number of strains are represented. Thus there are plants from the Cambridge and Glasnevin Botanic Gardens, the strains being of somewhat similar type. Lady Thyselton-Dyer, a distinct and pretty hybrid, raised at Kew, very unlike seedlings of *C. cruenta*, of which there are numerous plants in flower, representing considerable variation from each other; and the strain known as "Kew Blues," which is merely a colour-selection from the garden *Cineraria*. *Arctotis aspera* has fine orange-coloured flowers, and there are many other species of flowering plants that at the present moment help to make the house so attractive.

FRUIT FROM THE CAPE.—By the Union-Castle R.M.S. *Dunottar Castle*, which arrived at Southampton on Monday last, there came from Cape Town the undermentioned:—527 packages of Grapes, 124 of Pears, and four cases of Pineapples. There have been several small consignments of the latter fruit during the season. It would be interesting to know what success has attended the experiment; one made from Natal was not an unqualified success.

RICHMOND HORTICULTURAL SOCIETY.—This well-known society is adopting an energetic policy in regard to its forthcoming annual flower show. Last year the Royal Horticultural Society's Council and Committees were invited to Richmond. This year the National Rose Society will hold its show in the Old Deer Park, Richmond, Surrey, on Wednesday, June 26. Between the two societies, about £300 will be offered in prize-money, so that competition will very probably be of a severe nature. Schedules have been sent to former exhibitors, but the Hon. Sec. (Mr. C. R. KING, 61, George Street, Richmond, Surrey) will be glad to post copies to any intending exhibitors.

IN THE OPEN AIR AT KEW.—Visitors to Kew at the present time will be delighted with the glorious effect of the Daffodils flowering naturally in the glades and upon the mounds. The Tulips in the beds were not in bloom a day or two ago, but when these notes are published it is probable that the earliest of them, and all the Hyacinths will be so. Of flowering shrubs *Forsythia suspensa* is very rich and striking. A capital effect may be seen from this species close to the Palm house, where the plants are interspersed with a few evergreens. *Daphne Mezereum*, *Erica carnea*, *E. arborea*, *E. mediterranea*, and *E. m. hybrida*, are all in bloom, as is also the stately *Magnolia M. stellata*. *Prunus divaricata*, a good lawn tree, is in full flower, and a magnificent specimen of *P. triloba* upon a wall almost opposite to the entrance to the Heath house (T range), is sufficient in itself to repay a journey to Kew. The Alpine and other plants upon the rockery, though much later to bloom than usual, are daily becoming more attractive. The following are among the species in flower a day or two ago: *Anemone blanda* and others, *Primula Clusiana*, a dwarf little plant with

very richly-coloured flowers; *P. discolor*, *P. rosea*, *Fritillaria aurea*, &c., *Muscari*, and *Sanguinaria canadensis*, a papaveraceous plant with handsome white flowers. It has been called Bloodroot, from a liquid that is contained in the root-stock.

FLOWERS AT A FEAST.—At a banquet in New York lately, the cost for flowers alone is estimated to have been £4,000. There were 40,000 Roses, 20,000 Lilies, 5,000 Tulips, 5,000 yellow Narcissus, and 50,000 sprays of Smilax.

THE CHESTERFIELD AND DISTRICT CHRYSANTHEMUM SOCIETY has issued its report for the past year, and schedule of prizes to be offered at an exhibition of Chrysanthemums, fruit, &c., to be held on November 13 and 14. The Society will hold a spring show at Ashgate on April 24, but does not expend its whole energies upon exhibitions, for meetings are held, at which subjects of general horticultural interest are discussed. Several of the papers read last session are published with the report. The Society has contributed a sum of £40 to the Royal Gardeners' Orphan Fund. The Secretary is Mr. W. PARKES, Whittington Hall Gardens, Chesterfield.

BUTTERFLIES AT KEW.—A speaker at a recent meeting of the Entomological Society advocated the introduction to the Palm-house of certain tropical butterflies, and other ornamental insects. When the insects are so trained as to disport themselves only in the hours when the public are not admitted, there might be something to be said in favour of such a scheme, but as it is we tremble to think of the consequences to the plants which would ensue, not so much from the introduction of the insects, as from the ardour of collectors.

EDUCATION.—If there is one thing more than another essential to the progress of our country, and imperative if we are to succeed in the competitive struggle which awaits us, it is education—education of the right sort, and suitably and timely conducted. From this point of view, the recent decision of the Court of Appeal that nothing but elementary education is to be paid for out of the rates, however accurate from the legal point of view, is distinctly unfortunate. If the rate-payers are to be absolved, the money must be obtained from some other sources, or we must submit to see ourselves distanced in the race. Half a century ago, or even a dozen years ago, this was not clearly realised; but, happily, public opinion is becoming more alive to the importance of this subject.

TWO GOOD WINTER FLOWERING CARNATIONS.—We had recently the opportunity to inspect two batches of excellent varieties of Carnations in the gardens of J. P. MORGAN, Esq., Dover House, Roehampton. The first of these is known as John Peter Rugus, and has flowers of a shade of colour approaching vermilion, being exceedingly bright. Its habit of growth is very satisfactory, and the large clusters of buds upon all the plants sufficiently testified to its free-flowering qualities. The flowers sometimes burst the calyx, but not often, unless the plants are fed highly. The variety was granted an Award of Merit by the Royal Horticultural Society as long ago as January 16, 1894, when it was shown by Mr. WILLIAMS, gr. to the Duke of MARLBOROUGH. Those who may not have given this Carnation a trial are urged to do so. The other variety is named America, and was shown by Messrs. PAUL & SON at a meeting of the Royal Horticultural Society on November 6 last, when it obtained an Award of Merit. The blooms are larger and of better form than those of John Peter Rugus, and the calyx does not split, but the colour being cerise is not so rich or effective, if the two be staged together. This variety has a very strong habit of growth, being almost equal to that of *Souvenir de la Malmaison*. Mr. McLEOD, the gardener at Dover House, whose success with Carnations has been frequently described in these columns, considers the two Carnations under notice

to be the best winter-flowering varieties at this date obtainable, and in common with other cultivators, relates that the variety Winter Cheer appears to have become much weakened in constitution.

VICTORIA MEMORIAL GARDENS IN INDIA.—Mr. MCPHERSON writes to us as follows:—"With reference to the establishment of Memorial gardens or parks in India, noticed in the *Gardeners' Chronicle* as being suggested by *Indian Gardening*, would it not be far better to divide the £312,000 among a series of parks, than concentrate everything at Calcutta? If £34,000 or £35,000 were given to each of about nine establishments, say, in Cashmere, Dehra Dhoon, and somewhere in the Eastern Himalaya; at Kurrachee, Jabalpur, and at Calcutta; near Bombay, Bangalore, and Kandy in Ceylon; and each of these had a fine exhibition hall as a central feature, so as to give architects a chance at economical one-storied architecture; and, further, if these gardens were all planted on a single uniform instructive system, I cannot conceive the money being better employed. Twenty years ago the *Gardeners' Chronicle* was the first to publish my ideas of such planting. I have never abandoned the idea, but have worked steadily through my leisure to improve it ever since. Should India care to adopt the idea, however, my years of study are at her service without reserve, in a manner that would prevent waste of resources, and most effectually marry scientific grouping to the landscape. James McPherson, Trenton, N.J., U.S.A.

MR. H. F. MACMILLAN, Curator of the Royal Botanic Gardens, Peradeniya, and his family, intends to sail for England on May 5 for a holiday extending over some months.

D. T. FISH.—We greatly regret to have to announce the death on the 22nd inst. of our old contributor, at Edinburgh. For forty years or more he had been a constant contributor to these columns. For the moment we can only chronicle the sad intelligence, and reserve fuller details to a subsequent issue.

"THE GARDENERS' ASSISTANT."—The third division of the new edition of this famous book is now published by the Gresham Publishing Company, Farringdon Avenue, London. This new edition has undergone many vicissitudes owing to the ill-health of previous editors, but it bids fair to be brought to a very satisfactory conclusion in the hands of Mr. WILLIAM WATSON, the Assistant-Curator of the Royal Gardens, Kew. By his agency, and the aid of an excellent staff of contributors, the work has been brought up to date and well maintains its position as the standard work for practical gardeners. The illustrations are really useful, not merely pretty, and they are reduced to one or two sizes, which adds greatly to the uniformity of appearance by doing away with the puzzling diversity of size which characterises some works. A further improvement would be to indicate the real size by some proportionate scale. A few more details relating to the history of certain plants, such, for instance, as the Chinese Primrose, and to the "biology" or the manners and customs of plants, would not only be interesting but also of practical value. It is a pity that botanists and physiologists on the one hand, and gardeners and cultivators on the other, go on accumulating and publishing facts, while so few people seem to attempt to co-ordinate the work of the two classes of workers, so as to make it available for the advancement both of the science and of the art of gardening. Scientific knowledge is of no use to the gardener unless he can apply it. Gardening experience is of no value to the scientist unless he can profit by its lessons. The present part is devoted to plants cultivated under glass, including Orchids, Ferns, Palms, Cycads, succulent plants, and others. Chapters are also devoted to the various methods of bedding out, and to floral decorations. The

representation, purporting to be that of *Cyphomandra betacea*, is rather that of the "Melon Pear," *Solanum guatemalense*.

PUBLICATIONS RECEIVED.—*Report on Natal Botanic Gardens and Colonial Herbarium*, for 1900, J. Medley Wood, Curator. We learn that the year was "one of the driest, if not quite the driest year on record. . . . We have been in the habit of sending out from 4 to 7 tons of Mangoes, plucked green for making chutney, &c., but last year none were gathered. The crop of Litchis also was a complete failure, and all other fruit-trees suffered in a similar way." The herbarium is greatly overfilled, and it is hoped that a larger, better, and safer building will soon be provided.—*Journal of the Department of Agriculture of Western Australia*, February, 1901. With communications concerning: Paraguayan Tea, Sisal Hemp, Sea of Azor Barley, Animal Manures, and other crop and stock matters.—*University of Illinois Agricultural Experiment Station*, Urbana, January, Bulletin No. 61. The Farmer's Vegetable Garden, by John W. Lloyd. From the *New York Agricultural Experiment Station*, Geneva, come the following bulletins: No. 182. Experiments on the Sulphur-lime Treatment for Onion Smut, F. A. Sirrine and F. C. Stewart; No. 185. The New York Apple-tree Canker (second report), Wendell Paddock; No. 186. The Sterile Fungus *Rhizoctonia* as a Cause of Plant Diseases in America, B. M. Duggar and F. C. Stewart; No. 187. Commercial Fertilisers for Potatoes, III., W. H. Jordan.—*Bulletin of the Botanical Department, Jamaica*, February. Contents: Two Opposing Factors of Increase, Grafting the Mango-tree, and Irrigation.—*The Book Lover*, April. With an "interview" with Madame Sarah Grand, and portrait of that authoress, and notes and comments on book-lore generally.—*The Gardener's Assistant*, New Edition, vol. iii., 1891 (Gresham Publishing Co.).

HOME CORRESPONDENCE.

VALERIAN PHU AUREA.—About six years ago a plant of the Valerian *Phu aurea* was given me, and with the gift my friend said "This is a showy herbaceous plant, its brilliant orange-yellow foliage make a fine contrast with the many-tinted greens of the ordinary flower border." It grew so freely that I divided it, putting the two pieces about 5 yards apart in a sunny position, where they flourished, and made a very gay patch of colour until last year, when I noted one morning they were much crushed. Here I should remark that when my friend gave me the plant, he said, "your trouble will be that it will draw into your garden all the cats of the neighbourhood;" so I was not greatly surprised to find on examination that not only had a single cat rolled over and over them, but from their much shattered appearance there must have been several. Observing this, I got a chair and sat down to watch, and thus learn how it was the damage occurred. I had not long to wait before I saw my neighbour's blue-grey, long-haired Persian cat come quickly and jump on to the largest plant, and when there it rolled from side to side in a frantic way. Then came another cat, a black, "golden-eyed" tom, that at once strove for the mastery of the situation; then a third, and a fourth, and the havoc was so great about my plants that I interfered in their frolic, and drove all away, assisting their retreat with a few stones. After this I went indoors, but on coming out again about two hours afterwards, I found that the four cats had not only returned, but that the number was now increased to seven, and not much of my Valerians remained. I then got some paraffin and sprinkled the remains of the plants, but all to no purpose; the cats came, and rolled and rolled again over and over, with occasional scratches, until at last not any of my two plants or their roots remained; and the spot that they so lately adorned was hard and bare. Everything had disappeared, saving and except a few bits of much bruised leaves. But this is not all, for perhaps the most discomfiting part is that for well over four years I had pointed to and drawn the attention of my friends to these Valerians, and said that it was asserted that cats would come from far and near to roll on them. "A vulgar error," I said, "and here is clear proof of its fallacy." Now what I want to know is, why the numerous cats of the neighbourhood, my own included, never

in any way, injured, damaged, or apparently noticed my two strong-growing Valerian plants for the space of nearly five years; and then they, for some unknown cause, suddenly made there not only a place of meeting, but one for rampant enjoyment. It was more than amusing to watch them; they would stop in their mad revels about the spot and the plants, to eat a leaf or a part of one as long as any were left, and then, if possible, their rollings became more fast and furious, and, apparently, were more and more boisterously and keenly enjoyable. While even after every trace of "my beauties" had disappeared, some would come and sniff and sniff, taking a roll or two, after which they would lingeringly depart. I have studied Nature more or less all my life, but this action of the cats sparing my Valerian untouched for nearly five years, and then to come in numbers and utterly destroy the whole is beyond my comprehension. I cannot reason it out; it is with me a mystery. So I ask, "can anyone help me as to the cause," I saw the "effect." *Harrison Weir, Poplar Hall, Appledore, Kent.*

CRATÆGUS PYRACANTHA VAR. LELANDI.—Allow me to inform your correspondent, W. Miller, that the above plant he recommends for hedge planting is not suitable for this part of the country, viz., Kent. I have not seen *Cratægus Lelandi* more than 4 feet in height about here, and then it does not grow in a manner suitable for hedging; with me it forms a dense bush, and a very pretty one too, with its purplish tips of young growth. The berries I seldom see, as the black-birds and thrushes have them as soon as they attain maturity. Where it could be got to grow to a height of 6 to 9 feet, I should strongly recommend it, as it is quite as impenetrable as the ordinary Quick, which is generally used by our farmers. Another thing might be said about it is, that it is evergreen, and would form a good wind-break. But I certainly shall not try it, as in my opinion I should have to wait too long for anything like satisfactory results. I grow it as an ornamental shrub. *H. J. Day, The Crays and Orpington Horticultural Mutual Improvement Society.*

LARGE ONIONS.—Oddly enough, I recently had sent me from diverse sources, Aldenham House gardens and Malshanger gardens, Basingstoke, a few samples of the Giant Onions, presumably Ailsa Craig, grown at both places, the object of the senders being to exhibit their great keeping qualities. It used to be a common form of objection to these big Onions that they soon decayed. That may have been the case some years since, but now their culture is better understood, they are found to keep remarkably well. The giant bulbs sent me, ranging from 2 lb. to 2½ lb., are all as solid as if just pulled, yet they have been matured some six months. I see no reason why each one, if kept in a cool place, should not be as firm at the end of May. Probably no one will further contest their capacity to keep. But with regard to their uses there seems to be still a difference of opinion. It was but recently I read that old argument, that with such big bulbs nothing but waste would result in the kitchen. But these big bulbs are not grown for common flavouring purposes. There is not a grower of the Giants but does not also grow bulbs of the ordinary dimensions from spring sowings. But these objectors seem never to have heard of baked or stewed Onions, served in either way, making a delicious dish, and with very many persons a popular one. These large bulbs have softer texture than the small ordinary-grown bulbs have, and are far less hot or strong flavoured. It would be good for humanity if large Onions, so prepared, were much more largely consumed. Then these giant bulbs make capital seed stock. Every seedsman knows that, and to keep up the excellence of the stock grows giant bulbs, or purchases them expressly for this purpose. For this use it is matter of great moment that bulbs should keep well, that they may be planted in March quite sound. *A. D., April 6.*

A SIMPLE MOUSETRAP.—I think a description of a simple but most effective mousetrap might interest and be of service to gardeners who are troubled with mice amongst their early crops. It consists of an empty soft-soap tin (or, indeed, any similar vessel), 10 inches deep; this is let into the soil near where the mice are troublesome, level with the surface. Water to the depth of a few inches is put into the tin, and a small piece of board is

placed on the water, on which a small bit of tallow or other toothsome bait is placed. The mice jump down on to the board, and they are immediately tipped into the water and drowned. This trap was devised by one of Mr. White's men, Poulton Priory, near Cirencester, and I believe it will be found to be as effective as it is simple. I am assured that as many as four and five mice have been found in one tin in one day, and that it has cleared the gardens of them. *T. A., Cirencester.*

IRIS RETICULATA MAJOR (?)—At a meeting in February of the Royal Horticultural Society, some opposite opinions were expressed as to the above plant being a comparatively recent introduction. The question was raised by the exhibition of some charming flowers produced by bulbs growing in a pan, and another very poor flower, solitary, and rather old, the latter as representing *I. reticulata* (type). Quite naturally, the one was vastly superior to the other, and without knowledge of either plant the difference was marked. My contention is that the inferior flower in no sense represented the fine plant long ago distributed at *I. reticulata*, and I regarded it unfair to placard it thus, though I fully believe it was done in perfect good faith. I am not raising a question as to the varieties of *I. reticulata*, or of the superiority of one over the other, for I know at least three forms of *reticulata* that for present purposes may be styled minor, major, and maxima, so widely different are they. These varieties, too, are quite distinct from those known as *purpurea*, *Krelagei*, *cœrulea*, &c., which I name to save confusion. I shall, therefore, feel greatly obliged if anyone will say with absolute authority who is the raiser or introducer of *Iris reticulata major*, together with the date of its introduction to commerce. *E. H. Jenkins, Hampton Hill.*

RICHARDIAS FROM SEED.—It is not generally known that *Richardias* can be readily increased from seed. I have at the present time about three dozen plants growing in 48's, all of which are from home-saved seed, and the greater number have flowered, and are now showing their third spathes. The seed was sown on August 15, 1899. The seedlings remained in the seed-pan and were kept steadily growing through the winter. In the spring I potted them into 60's, and later on I planted them out in a border with other plants. They were re-potted up in 48's in last October, and I now have handsome plants in comparatively small pots, and this, too, with little trouble. *J. Bryant, Gokland Villa Gardens, Sandown, I. W.*

OMNIVOROUSNESS OF SPARROWS.—Sparrows devour not only Crocuses, Primroses, and Carnations, but also young Lettuces, Cauliflowers, Poppies, Pear-blossoms, &c. I wish to know what are the laws respecting sparrows. Is it legal or illegal to shoot or poison sparrows in towns or in the country? One person told me it is not illegal: another told me it is! Can some reader of the *Gardeners' Chronicle* give accurate information on the subject? *Chiria.*

SPARROWS AND CROCUSES.—I wish to know whether there is anything in the spring Crocuses, whether yellow or purple, to attract the sparrows, in the way of food or something beneficial to them? or is it from "pure cussedness" that they pick Crocuses to pieces, and Primroses also, but more especially perhaps the yellow Crocuses. Is there any foundation for the idea I have heard propounded that the sparrows are attracted by the saffron? *Rus in Urbe, Eastbourne.*

ANEMONE PULSATILLA LUTEA.—After failing several times to raise this plant from seeds given me by the St. Petersburg Botanic Garden, I imported some living specimens two years ago from Regel and Kesselring. This spring they have flowered. The blooms are apparently smaller than those of the British *Anemone Pulsatilla*, but they will be to some people singularly attractive. The enveloping sepals are coloured on the outside with the delicate dove colour of *A. vernalis*. On the inside all the sepals have a colour which approximates to *A. sulphurea*, but has more green in it. I think it exceedingly beautiful. *A. K. Bulley, Neston, Cheshire.*

SKIN IRRITATION CAUSED BY PRIMULA SINENSIS.—I would ask whether people are apt to find any-

thing of the same irritating properties in *Primula sinensis* as in *P. obconica*, so as to have their skin affected? I am myself liable to eczema, and have imagined that it has been produced more than once by my handling some *P. sinensis*, or even spending a little time in my small greenhouse where some plants are growing. *Rus in Urbe*.

EARLY APPEARANCE OF THE HUMMING-BIRD-MOTH.—Is it not unusual to see a humming-bird-moth so early in the year as this? I watched one in my garden this evening at 6 o'clock hovering over the flowers of White Arabis, and flying with the usual vigour of the genus. This day has been very sunny, but the wind distinctly fresh, and the

to get the migrated population back to the land. It is evident that agriculture fails to retain the people, and that calling seems, as at present practised, to be doomed. The only hope seems to be in converting the land into myriads of garden holdings, creating as it were once more, if possible, numerous small yeomen, who shall be more gardeners than farmers. With our minds of late so much concentrated upon things in remote countries, we have been oblivious to what is taking place at home. No doubt when this year's census returns are published, facts will be given which will help to open the eyes of the nation to what is a grave social danger. If the creation of a vast number of garden holdings does not arrest the migration evil, where are we to

STRAITS SETTLEMENTS.

PENANG.—I am sending you a photograph of a branched Coco-nut Palm. I have known this tree for years, and at one time it had seven branches; now there are only six, and all of them bearing fruit. I remember some few years ago, Mr. Morris read a paper before the Linnean Society on the subject of branched Palms, and I think he said that seven, in the Coco-nut, was the largest number recorded. This tree is growing in a plantation, and stands about a hundred yards from the sea-beach.

Like all its companions, it has been having a bad time lately, the season being exceptionally dry.



FIG. 100.—IRIS WILLMOTTIANA. (SEE P. 261.)

thermometer on the north side of my house has scarcely reached 51°; and last night was rather cold, and a workman informed me that early in the morning there was a frost. *Rus in Urbe, Eastbourne, April 19.*

BACK TO THE LAND.—Recent census returns have shown how rapidly and almost sensationally the depopulation of the rural districts is proceeding. Not only does this matter present a social problem, but it presents perhaps the gravest of all social problems. If the present migration into the towns cannot be arrested, some fifty years hence there will be no rural population, and the country will become largely uncultivated. It is difficult enough to advise how this migration is to be arrested. The most sanguine of social reformers can hardly hope

look for a remedy? It is a matter far above the petty region of party, or of what is commonly termed politics. *A. D.*

THE RECENT RAINY WEATHER.—During the past thirty years I can find no record of seven consecutive days of more or less continuous rain, such as we experienced on April 10, 11, 12, 13, 14, 15, and 16. It is true that on April 10, 14, 15, and 16, the downpour was of an intermittent character, with fine intervals, yet these days could not be described otherwise than as "rainy" during the major part of each day. The total fall during this prolonged wet period was only 1.38 inch. The gardens have greatly benefited by this rain, and all stone fruits promise very well. *A. Worsley, Isleworth.*

We have had very little rain since November, and water for domestic purposes is running short. I expect that as soon as we get a few showers, it will be an excellent time for collecting.

Already there are a good many trees in flower, the most conspicuous at the moment being *Schoutenia Mastersii*, of King. Just now one can locate every individual tree of this species growing on the hills surrounding the garden. *C. Curtis, Botanic Gardens, Penang.*

[A beautiful illustration, but as we have already figured two such cases, it is not necessary to add a third. *Ed.*]

SINGAPORE.—The main attraction of Singapore, where the Royalties were a day or two since—after

the harbour, which is very beautiful—is the Botanical Gardens. With 80 inches of rain during the year, and a constant temperature night and day of 90° or more, vegetation is naturally luxuriant. The park extends over more than 300 acres, on the slope of an evergreen hill. Here are to be seen great forest trees a mass of crimson bloom, delicate leaved Acacias 50 feet high, with vermillion blossoms at the end of every twig; Shalhodeas with their great orange flowers, bushes of yellow Allamanda, brilliant Crotons, with Ixoras, Begonias, Stephanotis, Callistemons, and every variety of Orchids blooming in the open air. It is the Kew Gardens of the East.

SOCIETIES.

ROYAL HORTICULTURAL.

(Continued from p. 4 of Supplement.)

Floral Committee — (continued.)

AWARD OF MERIT.

Arabis aubrietiioides.—Shown by Miss WILLMOTT.

Berberis congestiflora hakeoides.—Shown by Messrs. J. VEITCH & SONS, LTD.

Carnation May.—Shown by Messrs. JAMES & SON.

Erythronium giganteum var. Hortwegii.—Shown by H. J. ELWES.

Iris Willmottiana.—Shown by Miss WILLMOTT.

Primula viscosa.—Shown by Mr. J. WILSON.

Primula obconica (strain).—Shown by the Marchioness of BREABALANE.

Rhododendron Avelandii hybrida.—Shown by F. D. GODMAN, Esq.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the Chair; and Messrs. Jas. O'Brien (Hon. Sec.), De B. Crawshaw, H. M. Pollett, J. W. Odell, E. Hill, W. Cobb, H. T. Pitt, F. A. Rehder, W. H. Young, W. H. White, H. A. Tracy, H. J. Chapman, J. W. Potter, J. G. Fowler, J. Douglas, and T. W. Bond.

There was a very fine display of Orchids, the prize of honour, a Gold Medal, being awarded to Mr. THOS. ROCHFORD, Turnford Hall Nurseries, Broxbourne, for a grand display of *Odontoglossum crispum*, made up of 260 splendidly bloomed examples, varying considerably in form and marking of the flowers, according to the locality from which they were imported, but all good. The latest form among those exhibited was of a remarkable type, with broadly ovate labellum, seeming to indicate *O. Pescatorei*. Among the typical varieties were several with flowers of extraordinary size, and the spotted forms included *O. crispum Bonnyanum*, *O. c. Triane*, *O. c. xanthotes* "Queen Alexandra," a pure white, with a few orange spots on the lip; *O. c.* "The Gem," a large white form, with lemon-yellow crest. Among the hybrids were *O. x. Loochristiense Turnfordiense*, yellow, blotched with brown; *O. x. Wilckeanum*, Turnford Hall variety, a very fine form; and some fine things of the *O. x. Andersonianum* class. With them were well-bloomed plants of *Oncidium concolor*.

Sir TREVOR LAWRENCE, Bart., Burford (gr., Mr. W. H. White), staged a small group of exceptionally fine *Odontoglossums*, &c., including the fine purple-blotched *O. crispum pardalinum*, and the handsome *O. c. Stevensii*; also *O. x. Mulus*, Burford variety, and *Dendrobium x micans Euryclia*, with very large purple-tinted flowers (Silver Banksian Medal).

H. T. PITT, Esq., Stamford Hill (gr., Mr. Thurgood), showed an effective group, for which a Silver Flora Medal was awarded. It included several very fine *Cattleya Schroderae*, the best being "Pitt's variety," which has the colours of *C. Percivaliana*. Also in the group were a good selection of *Odontoglossum*, *Galeandra Devoniana*, *Lycaste Skinneri* "Pitt's variety," with very broad sepals; *Trichopilia suavis*, *Miltonia vexillaria*, *M. Roezli*, &c.

DE B. CRAWSHAW, Esq., Sevenoaks (gr., Mr. Stables), received a Silver Flora Medal for a group of excellent *Odontoglossums*, splendidly grown and well flowered. Among them were *O. Hallii-crispum* Rosefieldiense, nearer to *O. Hallii* than those previously shown; *O. triumphans imperator*, of the famed "Lionel Crawshaw" class, but with a curious tint of olive-green in the blotching; *O. x. Andersonianum* "Raymond Crawshaw," very fine; and many excellent forms of *O. Andersonianum* and *O. crispum*.

R. BROOMAN-WHITE, Esq., Ardaraich, Garelochhead, secured a Silver Banksian Medal for a very good group of fine cut examples of the best type of *Odontoglossum crispum*, spotted, rose-tinted, and white forms. With them were good *O. x. Andersonianum*, *O. x. Wilckeanum*, *O. luteo-purpureum*, and a fine *Cattleya Schroderae*.

JEREMIAH COLMAN, Esq., Gatton Park (gr., Mr. W. P. Bound), was awarded a Silver Banksian Medal for a good group, at the back of which were fine species of *Cymbidium Lowianum*, *C. x eburneo-Lowianum*, and *C. eburneum*. In front were some very fine *Odontoglossum Hallii*, *O. triumphans*, *O. luteo-purpureum*, *O. x. Andersonianum*, *Lycaste Skinneri alba*, *Oncidium sarcodes*, *Epiphrontis Veitchi*, *Madevallias*, *Cypripediums*, &c.

MESSRS. JAS. VEITCH & SONS, Chelsea, staged an effective group made up of seven good plants of their bright orange and purple-coloured *Lælia x Latona*, a good plant of the large lavender-coloured *Lælia x Digbyano-purpurata*, with a very large purple-veined, fringed lip; two *Lælio-Cattleya Highburyensis*, Veitch's variety, two *Cattleya intermedia alba*, and the new and fine *Lælio-Cattleya x Cybele* (Silver Banksian Medal).

MESSRS. HUGH LOW & CO., Bush Hill Park, were awarded a Silver Banksian Medal for a group in which was a grand plant of *Dendrobium Devonianum* with twelve home-grown pseudobulbs bearing together over 300 flowers. Also in the group was a good and varied series of *Cattleya Schroderae*, including the fine *C. S. aurantiaca*, *Dendrobium Findlayianum*, *D. Brymerianum*, and other *Dendrobies*; *Oncidium concolor*, *Odontoglossums*, *Cattleya intermedia nivea*, &c.

MESSRS. B. S. WILLIAMS & SON, Holloway, staged a good group, the back specimens in which were finely-grown *Vanda suavis*, which is now seldom seen so well exhibited. In the centre were a number of the rose-crimson *Calanthe Sanderiana*, beside them were two good specimens of *Cymbidium Devonianum*, and among others noted were *Dendrobium Wardianum album*, *Odontoglossums*, and *Cypripediums* or various sorts, and *Ada aurantiaca* (Bronze Banksian Medal).

MR. THOS. COOMBE, The Hendre Gardens, Monmouth, showed *Cypripedium x Lady Llangattock* (Lawrenceanum δ selligerum η), a fine flower of good substance.

G. W. BIRD, Esq., West Wickham (gr., Mr. Redden), showed *Odontoglossum x Andersonianum*, "Margaret," a finely-spotted variety.

Sir JAS. MILLER, Bart., Manderston, Duns (gr., Mr. Hamilton), sent a fine specimen of *Lælio-Cattleya x Lady Miller* (*L. cinnabarina x C. Schofieldiana*), of a pleasing tint of light reddish-orange, with purple veining on the lip.

H. F. SIMONDS, Esq., Beckenham (gr., Mr. Geo. Day), showed two good specimens of *Cypripodium punctatum*.

FRANK A. REHDER, Esq., Gipsy Hill, sent *Cypripedium x Ida*, bearing a close resemblance to a good *C. Mastersianum*. Col. SHIPWAY, Chiswick (gr., Mr. Walters), sent a good *Madevallia Schlimi*.

WALTER COBB, Esq., Tunbridge Wells (gr., Mr. J. Howes), showed the richly-coloured *Odontoglossum triumphans* Cobbi.

W. M. APPLETON, Esq., Weston-super-Mare, showed a good variety of *Cypripedium x Vipan*.

A. S. HITCHINS, Esq., St. Austell, sent a pretty form of *Odontoglossum x elegantius*?

MR. ED. KROMER, West Croydon, showed *Lycaste lanipes*, and a small *Angraecum* from West Africa.

Mrs. J. DOUGLAS, Edenside, Great Bookham, showed cut spikes of *Phaius x Norman*, and *P. x Cooksoni*.

GEORGE SINGER, Esq., Coundon Court, Coventry (gr., Mr. Collier), sent a fine *Cypripedium x Shilliana*, *C. x W. R. Lee*, and another fine variety, and the fine *Odontoglossum luteo-purpureum* Coundon Court var.

Sir WEETMAN PEARSON, Paddockhurst, Crawley (gr., Mr. A. Wadde), showed three fine specimens of *Cattleya Lawrenceana*, the largest having three spikes, bearing together twenty-five flowers; also two good *Odontoglossum triumphans*.

Awards.

Odontoglossum luteo-purpureum "Coundon Court" variety, from GEO. SINGER, Esq., Coventry (gr., Mr. Collier).—A noble variety of the typical form, but with very large and richly coloured flowers, which were borne on a fine spike nearly 3 feet in length. The sepals were dark chocolate-brown, with yellow margin and tips. Petals light yellow, spotted dark brown; lip white in front, yellow at base, finely fringed, and bearing some light brown blotches (First-class Certificate).

AWARDS OF MERIT.

Odontoglossum luteo-purpureum Burford variety, from Sir TREVOR LAWRENCE, Bart., Burford (gr., Mr. W. H. White).—Flowers very large, yellowish, heavily barred, and blotched chestnut-brown; lip fringed and broad, primrose-yellow, with brownish spotting in front of the highly developed crest.

Odontoglossum x Adrienne Crawshawiana, from DE B. CRAWSHAW, Esq., Sevenoaks (gr., Mr. Stables).—A perfect flower, white on the inner halves of the segments, and yellow on the outer parts, some fine purple-brown blotches being arranged in irregular circles round the column; lip crimped and well displayed.

Odontoglossum x Walsbyanum "Turnford Hall" variety, from Mr. THOS. ROCHFORD, Broxbourne.—Flowers light yellow, petals fringed, sepals with heavy, dark brown blotches; petals and lip bearing only a few spots.

Odontoglossum crispum Edward VII., from Mr. THOS. ROCHFORD.—Flower of good form, tinged with rose-purple, especially at the back, and bearing reddish-purple blotches mostly on the inner halves of all the segments.

Oncidium Marshallianum sulphureum, from WALTER COBB, Esq., Tunbridge Wells (gr., Mr. J. Howes).—A singular case of colour suppression; the whole of the flower being of a bright yellow colour except the sepals, on which brown spots are usually seen. The spotting was of a greenish-yellow tint, the brown being suppressed.

Lælio-Cattleya x Cybele (L.-C. \times Schilleriana \times C. Triane) from Messrs. JAS. VEITCH & SONS. A really fine hybrid, with flowers equal in size and beauty to a good *Cattleya Mendeli*, but with a very different form to the lip, which is finely rounded and crimped in front. Sepals and petals white, with a faint tint of lavender colour. Lip white at the base, with a tracing of light rose outside the side-lobes. Disc primrose-yellow; front marbled and veined with bright ruby-purple colour.

Narcissus Committee.

Present: J. T. Bennett-Poe, Esq., in the Chair; Miss Willmott, Rev. G. H. Engleheart, G. E. Bourne, Messrs. J. H. de Graaff, P. R. Barr, A. Kingsmill, W. Goldring, W. Ware, and others.

Narcissi were, of course, in strong force after the burst of summer-like warmth, but even by this date the coloured flowers of the highest class were not yet in evidence.

A Silver-gilt Flora Medal was awarded to Messrs. BARR & SONS, King Street, Covent Garden, London, for a large exhibit containing the well-known varieties in fine condition, with a few good novelties, such as the brilliant Lucifer, the refined Maggie May, and several large new Trumpet forms.

MESSRS. BATH & CO., Ltd., of Wisbech, obtained a Silver Flora Medal for a well staged exhibit; and Messrs. HOGG & ROBERTSON, of Dublin, a Bronze Banksian Medal. The sample of *Lady Margaret Boscawen*, a grand white and gold incomparabilis of beautiful quality, from the latter firm, merited higher recognition.

The feature of the show was a stage of hybrids, raised and shown by the Rev. G. H. ENGLEHEART; a set of most interesting hybrids of *N. triandrus*, the vivid Oriflamme, and a considerable range of white or cream-coloured Trumpets of exquisite refinement were among the noticeable varieties exhibited.

Awards.

Miss WILLMOTT obtained First-class Certificates for two very fine flowers, raised originally by the Rev. G. H. Engleheart, viz., Robert Berkeley and Earl Grey, both hybrids of *N. triandrus*.

MESSRS. BARR gained the same award for a large Ajax, Lord Roberts, and Incomparabilis Lucifer.

Awards of Merit were recommended to *Stella superba*, from WALTER T. WARE, Ltd., Bath; *Master-at-Arms*, St. Cecilia, and *Herrick*, from the Rev. G. H. ENGLEHEART.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq., Chairman; and Messrs. A. Dean, W. Fyfe, E. Beckett, J. Jaques, P. C. M. Veitch, Jas. Cheal, J. Willard, A. Ward, Geo. Wythes, James Smith, A. H. Pearson, Geo. Normad, W. H. Divers, Geo. Woodward, F. Q. Lane, H. Markham, G. Reynolds, Geo. Kelf, W. Bates, S. Mortimer, James H. Veitch, W. Wilks, and J. Wright.

A Cultural Commendation was awarded to Mr. GEO. WOODWARD, gr. to Roger Leigh, Esq., Barham Court, Maidstone, who showed excellent fruits of a good late Apple, Calville Malingre; and a Vote of Thanks was accorded to Messrs. J. CHEAL & SONS, Lowfield Nurseries, Crawley, for an exhibit of six dishes of Apples.

MR. JOHN WRIGHT, V.M.H., who moved at the last meeting of the Committee that an Award of Merit should be recommended to the Pear Bergamotte Espere, and which award, though carried by a large majority, was subsequently annulled by the Council (see letter from Secretary in *Gardeners' Chronicle*, April 13, p. 243), again referred to the subject, and moved the following resolution:—

"The members of the Fruit Committee present at the meeting on April 9, and who, if not without a dissentient vote, by a majority of not less than ten to one, recommended an Award of Merit to Pear Bergamotte Espere, placed before them by the Earl of Ilchester, regret the action of the Council in hastily publishing the Council's dissent in the Press without any reason assigned (or affording the Committee an opportunity for reconsideration of the recommendation), and thus reflecting injuriously on the capacity of the members in question as judges of fruit."

The resolution was seconded by Mr. ALEX. DEAN, but was subsequently withdrawn after a statement had been made by the Chairman, on behalf of the Council, who, we believe, undertook that on any future occasion of the kind the Council would request the Committee to reconsider an award it could not agree with, rather than repudiate it in the horticultural Press.

The following statement, read by the Chairman, has been communicated to us by the Society's Secretary:—

"I am desired by the Council to inform you that they have left the confirmation of the Award of Merit recommended by this Committee at the last meeting to Bergamotte Esperen Pear in abeyance, as they would like the Committee to have the experience of another season, the past one having been, in their opinion, an exceptionally favourable one for many late Pears, not ordinarily of first-rate merit. The Council do not think that any real injustice will be done to Bergamotte Esperen, even if it prove itself to be all that the Committee considered it on April 9; as having been in cultivation for quite sixty years without obtaining any award, it can afford to wait and approve itself in at least two consecutive seasons.

"The Council are happy in being able to approve and confirm the recommendations of the Committee in 99 out of 100 cases, and they trust that the Committee will not feel hurt by their exercising what seems to them only a wise caution in the present exceptional instance."

NATIONAL AURICULA & PRIMULA.

APRIL 23.—Mr. T. E. HENWOOD, the Secretary of this Society, said, at the usual luncheon, that the exhibition of the present year, held at the Drill Hall on Tuesday last, was one of the finest and poorest since he had been connected with the Society. As he pointed out, the Auricula is a peculiar flower, and if the pips just as they begin to expand come into contact with cold currents of air, they become paralysed, and do not expand, let the grower try ever so much to induce them to do so. Up to within a very few days of the show, cold retarding winds and leaden skies had been general, and growers had done their very best to induce their plants to bloom. Then a few days before the show came a burst of warm, close sunshiny weather, and this visitation had a serious effect upon the hastened flowers. But as Mr. Henwood said, the growers always bring what they can, and though it was well known the flowers would be seen in a poorly developed state, it was yet a much more extensive display of the Auricula than was at one time expected.

Show Auriculas.—It was the varieties in this section which suffered most from the incidence of the weather, and it was all the more creditable to Mr. JAMES DOUGLAS, of Great Bookham, that he should have staged so good a twelve as he did, which gained for him the 1st prize. He had of green edges, Abraham Barker (a new northern flower), Monarch, and Zola; grey edges, George Lightbody, Frances Sander, and Perseverance; white edges, Maggie, Peri, and Acme; selfs, Hero, Cleopatra (a lively deep violet-magenta), and Raven. Mr. W. SMITH, Bishops Stortford, came 2nd: he had, of greens, John Hannaford, and Abbe Liszt; grey edges, Geo. Rudd, Dinham, and Mrs. Dodwell; white edge, Heather B-II; and self, Black Bess, &c. Mr. PURNELL-PURNELL, Streatham Hill, was 3rd.

There was, strange to say, but one entry with six varieties, though it is usually a strong class, viz., from Mr. PURNELL-PURNELL, to which a 2nd prize was awarded, the 1st being withheld.

There was a much better competition with four varieties. Mr. J. T. BENNETT-POE, Ashley Place, was placed 1st, having green edge Mrs. Henwood, grey edges Geo. Rudd and Richard Headly, white edge Rachel. Mr. J. W. EUSTON, gr. to Mrs. WHITBOURN, Great Gearies, was 2nd; and Mr. R. HOLDING, Birmingham, 3rd.

There was a good competition with two plants. Mr. P. HEMNELL, Winchmore Hill, was 1st, with the Rev. F. D. Horner, green edge; and Heroine, self; the latter much shaded, which is its common fault. Mr. J. T. BENNETT-POE was placed 2nd, with green edge Abbe Liszt, and grey edge George Rudd, which we thought to be the most refined pair; and Mr. J. W. EUSTON was 3rd.

Single Plants.—The green edges ran as follows:—John Hannaford, from Mr. J. T. BENNETT-POE; 2nd, Mr. R. HEMNELL, with the Rev. F. D. Horner; and 3rd, Mr. POE, with Mrs. Henwood. Grey edges: 1st, Mr. HEMNELL, with George Lightbody; 2nd, Mr. W. SMITH, with George Rudd; and Mr. HEMNELL was 3rd with the same. White edges: 1st, Mr. HEMNELL, with Acme; 2nd and 3rd, Mr. EUSTON, with the same variety. Selfs: 1st, Mr. POE, with Black Bess; Mr. HEMNELL was 2nd, with Mrs. Potts; and Mr. A. R. BROWN, Handsworth, 3rd, with Cleopatra, a bright purple self.

Collections of Fifty Auriculas were shown by Mr. J. DOUGLAS and Mr. PURNELL-PURNELL, the flowers generally rough and inferior—a class that might with advantage be got rid of altogether; it represents the leavings after the best flowers have been selected.

Alpine Auriculas.—These were certainly more attractive than the show varieties; they carried good heads of bloom, and they had a very gay appearance, being of brighter colours.

With twelve varieties, Mr. J. W. EUSTON was 1st; his leading gold centres were Lord Roberts, Julia, Ruby, Early Dawn, Diomedes and Hector; his white edges: Bellona, Desdemona, and Perfection. Mr. J. DOUGLAS was 2nd; he had of golden centres: Revolution, Firefly, one of the brightest; Ziska, Bryan, Duke of York, and Rosy Morn; white edge: Mrs. Harry Turner.

With six varieties Mr. J. W. EUSTON was 1st, having Duke of York in perfect form, a very rich variety, which was selected as the premium alpine in the show; and the following other varieties: Urania, Silvia, Ruby, Hilda, and

Constantine. Mr. J. T. BENNETT-POE was 2nd, his two leading flowers were Firefly and Dean Hole.

With four Alpines Mr. A. R. BROWN, Handsworth, Birmingham, was 1st, he had such standard varieties as Miranda, Mrs. Gorton, Fred Knighton, and J. F. Shaw. Mr. POE was 2nd, the 3rd prize falling to Mr. R. HOLDING.

The best golden centres shown as single plants were Duke of York and Dean Hole, from Mr. POE. Mr. EUSTON coming 3rd with the last-named.

But one white-centred flower was "placed" by the judges, Constantine, from Mr. EUSTON.

Fancy Auriculas.—There is always something fascinating about these singular nondescripts, which defy classification under any other heading. They are the outlanders of the Auricula community. They are too beautiful to be thrown away, and they illustrate the fact that the Auricula has about it a kind of sturdy independence, and will not in every case be guided just along the path the florist wishes it to take. Mr. DOUGLAS was 1st, with a very few fine varieties in his collection; and Mr. EUSTON, 2nd.

Fancy Polyanthus or Giant Orlips.—These were represented by large and striking plants in collections of twelve. Mr. DOUGLAS was 1st; Mr. EUSTON, 2nd; and Col. DIXON CHELFORD, 3rd. The last-named had very fine quality, but the plants drooped, having evidently been placed in pots for the occasion, which is allowable, but rather trying on such a hot day.

Primroses.—These were not very good in quality, and we seem to have gone back in that respect, while the weather of the three previous days had told upon them. Mr. DOUGLAS was again 1st; Mr. EUSTON, 2nd; and Messrs. ISAAC HOUSE & SON, Westbury-on-Trym, 3rd.

The leading basket of Primroses and Polyanthus mixed came from Mr. W. BEALE HAYES; Primroses were particularly good. Messrs. HOUSE & SON were 2nd; and Miss HOPKINS, Knutsford, 3rd.

Double Primroses.—These evidenced something like a revival in quality. Messrs. HOUSE & SON had pans of the rich crimson-sulphur, a small purple named Paddy, lilac, white, and Croussi; Miss HOPKINS was 2nd with a good selection.

Primulas in Species.—These were strongly shown, and Mr. PURNELL-PURNELL ran Mr. DOUGLAS hard for the 1st place, as there were strong and weak points in both collections. Mr. DOUGLAS had verticillata, obconica, Sieboldi, floribunda, Forbesi, frondosa, decora, &c. Mr. P. PURNELL had obconica, denticulata, and its white variety, nivalis, and japonica as his best.

With six, Mr. BEALE, who was the only exhibitor, was placed 1st, with good illustrations of nivalis, rosea, floribunda viscosa, Allioni, and Auricula.

The only collection arranged in a box came from Mr. PURNELL-PURNELL, quite a representative one, very nicely arranged; obconica, verticillata, denticulata, Sieboldi, floribunda, viscosa, intermedia, marginata, &c., were mixed with forms of Auriculas.

The premier show Auricula was Horner's Maggie, white edge, shown by Mr. DOUGLAS. The premier alpine was Douglas' Duke of York, which fell in every particular, shown by Mr. EUSTON.

Seedling Auriculas.—Of the show type two selfs were exhibited by Mr. R. HEMNELL, and awarded 1st and 2nd prizes, viz., Zulu and Helen, both dark and promising. There were more seedling alpines; of gold centres, Mr. EUSTON was placed 1st with Niobe; and Mr. POE 2nd with Bertha. Mr. R. HOLDING was the only prizewinner with a white centre, he had Rose Holding, also promising.

There were two classes for those growers "who had never won a prize," which is a somewhat loose statement; one for four show varieties, and one for six alpines.

Polyanthus, Gold-laced.—These refined types are now relegated to the end of the schedule, but they were rather better represented than last year. Mr. R. DEAN, Ranelagh Road, Ealing, was 1st, with Middleton Favourite, Mrs. Brownhill, and Cheshire Favourite. Messrs. HOUSE & SON were 2nd, with William 4th, Cheshire Favourite, and John Smith. With a single plant Mr. DEAN was 1st, with Miss Turner, a dark-ground variety of good promise, and a robust grower; Messrs. HOUSE & SON were 2nd, with Cheshire Favourite.

Messrs. VEITCH & SONS, Chelsea, exhibited two baskets of blue Primroses, and one of the giant common yellow, Evelyn Arkwright. Messrs. ISAAC HOUSE & SON had a pretty arrangement of Polyanthus and Primroses in vases, showing how they can be utilised for such purposes as table and room decoration.

LINNEAN SOCIETY OF LONDON.

APRIL 4.—C. B. CLARKE, F.R.S., Vice-President, in the Chair.

A letter was read from the Home Secretary conveying "His Majesty's thanks for the loyal and dutiful Address of the President and Council of the Linnean Society expressing sympathy on the occasion of the lamented death of Her late Majesty Queen Victoria, and congratulations on His Majesty's Accession to the Throne."

The Secretary exhibited some British species of plants forwarded by M. Buysman, of Middleburg, to show the character of a proposed issue to include the whole of the British Flora; on which some remarks were made by the Chairman and Mr. James Groves.

Mr. W. B. Hemsley, F.R.S., exhibited specimens of Sapium and Hevea (Euphorbiaceae) and Castilleja (Artocarpaceae) with a view to clear up certain questions concerning the Rubber-

trees, by examining a large series of plants and seeds forwarded by Mr. Jenman, Government Botanist in British Guiana. The genus Hevea included ten or a dozen described species inhabiting eastern tropical South America, but none in the West Indies. Hevea brasiliensis, the source of the true Para rubber, was not very different from Hevea guianensis, which is restricted to French Guiana, the differences between them being shown in the figures given of the floral structure and seeds in Hooker's *Icones Plantarum*, plates 2570-2577. It was formerly supposed that two species of Hevea might be distinguished in British Guiana, one (Hevea pauciflora) having thin leaves and a hairy ovary, the other thick coriaceous leaves and a glabrous ovary; but after examining a large number of specimens, Mr. Hemsley had come to the conclusion that the differences were not constant, and that all the specimens exhibited might belong to one species, and merely represented individual variation. The exhibition demonstrated the difficulty of determining species of Hevea from imperfect spec. mens., and especially from seeds alone.

A paper was read by Messrs. W. B. Hemsley, F.L.S., and H. H. Pearson, F.L.S., on a small collection of dried plants made by Sir Martin Conway in the Bolivian Andes in 1898-99. This collection contained but forty-six species, but these were of special interest from the great height at which they were found, i.e., between 18,000 feet and 18,700 feet above sea-level. The highest Andine plants on record were stated to be Malvastrum flabellatum, Wedd., and a grass, Deyeuxia glacialis, Wedd.

DEVON AND EXETER GARDENERS'.

APRIL 10.—The last meeting of the session, held on the above date, was presided over by Mr. J. MERRITT, gardener to Mr. Ashby, of Matford House; and the reader of the essay for the evening was Mr. G. H. Head, assistant gardener at Poltimore Park, his subject being "The Treatment of Cool Orchids."

In the cool Orchid-house, said Mr. Head, were grown those Orchids of the higher altitudes of Peru and the Himalayas, the required temperature of which was from 60° F. by night to 70° or 75° by day in summer, and in winter 45° to 50° by night, and about 65° by day. Odontoglossums would stand a lower winter temperature with safety. The path through the house should be slightly saddle-backed, to give a dry foot-tread, and retain a little water at the sides. For damping-down either hard or soft water will do, but for the plants rain-water alone should be used. Roller blinds are the best kind for attaching to the roof, and in the winter it is an advantage to have side blinds, as they check the radiation of heat. Good peat-fibre (with the finer portion shaken out), added to living sphagnum-moss, forms the most suitable compost. The pot must be about three-parts filled with clean crocks, amongst which the compost should be worked with a potting-stick. At the first potting the pseudo-bulbs should be placed on the top, and in repotting, the compost should be gently but firmly worked in amongst the roots with a potting-stick, clipping off any straggling fibre that may hang around the edges of the pot, and finishing the operation with a layer of living sphagnum-moss. When the soil becomes exhausted or sour, the plant should be repotted, and this should only be done after growth has recommenced. In applying water, plants in baskets, pans, or those fastened on blocks of wood should be immersed in a vessel of water; and damping-down should, in the summer, be thoroughly performed in the morning and afternoon. If there is a thick bed of shingle upon the staging, it will not require damping so often. The admission of air should be regulated by the indication of the thermometer. In cultivating the Odontoglossums, the fact should be considered that the plants are growing all the year round, and therefore should not be dried off.

Masdevallias, being natives of great altitudes, must be placed in pots and pans which are very well drained, as water has to be afforded them very copiously. A compost consisting of peat and sphagnum moss, together with a small quantity of clean, sharp sand, is what they require. The plants are always growing.

Disas require a similar compost, plenty of moisture in the air, and a free ventilation. After flowering, they should for a time be allowed to lie dormant in a frame placed on the north side of a wall.

Sophronis should be grown in pans suspended from the roof, and be allowed plenty of water all the year round.

Mr. Head gave a short list of the more effective species for the gardener to grow of Odontoglossums, Oncidiums, Cyrtopodiums, Masdevallias, Disas, Epidendrums, Sophronis, &c., briefly describing their beauties and distinctive characteristics of flower. A. H.

ROYAL HORTICULTURAL OF IRELAND.

APRIL 12.—The above Society held its spring show in the Royal University Buildings on the above date. Owing to the financial condition of the Society, the number of classes was reduced, and the exhibition was therefore smaller than usual. Nevertheless, there was a fine display of flowering bulbs. The Lord and Lady Lieutenant and party visited the show in the afternoon.

The exhibits made by the nursery trade deserve recognition, foremost amongst the same being Miss CURRY, of Warren Gardens, Lismore, who staged upwards of 100 varieties of Narcissus (Gold Medal).

Messrs. HOGG & ROBERTSON, of Mary Street, and Rush, co. Dublin, had a fine array of Tulips, Hyacinths, and Narcissus (Silver Medal).

Messrs. MACKEY & SON, Ltd., Sackville Street, had some bulbous plants, backed by Kentias (Commended).

Mr. BAYLOR HARTLAND, of Cork, sent a bloom of his new Trumpet Daffodil, called provisionally Hyperion; arranged behind it was a bloom of Mr. Kendall's King Alfred, probably for comparison, which seemed incongruous, as Hyperion is a bicolor, while King Alfred is a self. In comparing Hyperion with Miss Willmott, it is to the disadvantage of the former; probably the trumpet of Hyperion may be a little longer, but it lacks the superb finish of Miss Willmott, both from the fimbriation of the cup, and pureness of the perianth segments, otherwise it is a fine flower, and it was awarded a First-class Certificate.

Messrs. ALEXANDER DICKSON, Ltd., Newtownards and Belfast, had a fine display of Narcissus, but they were arranged behind their Roses, and consequently were less conspicuous. The Roses comprised nearly 150 varieties (Gold Medal).

Messrs. RAMSAY & SONS, Ballsbridge, had a circular stand of foliage and flowering plants, as Kentias, Crotons, Ferns, and miscellaneous flowering plants.

From the Botanic Gardens, Glasnevin (Mr. F. W. Moore, Curator), a semi-circular stand of ample size was erected under the organ. The following plants were conspicuous. *Hemantthus nalaensis*, the golden yellow *Spathoglottis (aurea)* *Avens gracillimum*, *Cymbidium eburneum*, *Ansellia africana*, and *Acacia pulchella* Dicksoni, also Crotons, *Acalyphas*, *Azaleas*, Ferns, Palms, &c.

Lord ARDILAWN had a fine exhibit of foliage and flowering plants arranged in tiers. A Certificate of Cultural Excellence was awarded to Mr. Campbell, his Lordship's gardener.

Mrs. GOODBODY, Obelisk Park, Blackrock (gr. Mr. Davis), exhibited a group of excellent *Hippeastrums*, interspersed with *Freesias*, *Ferns*, &c. The award of a Cultural Certificate was an inadequate recognition of the merits of this group.

From the Countess of CALEDON, Caledon Park, Tyrone (gr. Mr. W. Jeffreys), were shown some excellent Violets, the variety being a seedling named after her Ladyship. It is lighter in colour than Marie Louise, and rather larger. The variety *La France* was also staged (Cultural Certificate).

Mr. DAVIS showed, from Obelisk Park, a group of *Cyclamen* (whites), and *Begonia Gloire de Lorraine*.

COMPETITIVE CLASSES.

The 1st prize of a Silver Challenge Cup, &c., offered for nine pots of Roses, was won by Mr. Davis, gr. to Mrs. GOODBODY, Obelisk Park; but Mr. J. MILLAR, Baggot Rath House, Sandy-mount (gr. P. Geoghegan), was an exceedingly close 2nd.

Mr. J. BYRNE, gr. to G. DRIMME, Esq., Bellevue, Bootstown, won 1st prize for a table of plants having good *Dendrobiums*, *Odontoglossums*, *Crotons*, *Palms*, *Ferns*, &c.

A stand of cut blooms of *Narcissus* was staged in superb condition by Mr. Rigg, gr. to Lord CLONCURRY, Lyons, co. Kildare, who easily took the premier place in all the classes; for the great class, representing the three great groups, *Magnicoronati*, *Medio-coronati*, and *Parvi-coronati*, three vases of each were faultlessly staged by Mr. Rigg. Roses were good.

In the fruit classes competition was weak. Strawberries were well shown by Mr. McKenna, gr. to Lady E. BURY, Charleville Forest, Tullamore. Pears were well shown by Lady E. BURY, Charleville. Apples by E. D. OLIER, Esq., Bray, and Lady E. BURY, who took the leading place.

For a stand of vegetables, ten distinct kinds, the forced vegetables of Lord ASHTOWN, Woodlawn, gained for him the premier place. For a collection of six kinds, Mr. Tyndall, gr. to C. ROCHE, Esq., Giltown, staged a nice collection.

CROYDON HORTICULTURAL MUTUAL IMPROVEMENT.

APRIL 16.—At a meeting held on the above date, Mr. H. J. CHAPMAN, gr. to R. I. Measures, Esq., Cambridge Lodge, Camberwell, gave a paper on "Cypripediums." The lecturer dealt with the early history of the *Cypripediums*, and their geographical distribution, noting the divisions of the genera. The subjects of fertilisation and hybridisation were described, and the parentage mentioned of some of the most remarkable hybrids. Mr. Chapman's remarks upon cultivation were much appreciated by those present.

The lecture was illustrated by about fifty beautiful paintings of *Cypripediums* by Miss N. Roberts, artist to the Royal Horticultural Society, and kindly lent by the artist and by R. I. Measures, Esq.

Mr. W. E. HUMPHREYS, gr. to A. H. SMEE, Esq., The Grange, Hackbridge, exhibited a beautiful group of Orchids.

The Chairman, Mr. W. J. SIMPSON, had twelve fine cut flowers of *Cypripediums*; Mr. F. C. L. WRATTEN four beautiful seedling *Auriculas*.

BRIGHTON AND SUSSEX HORTICULTURAL.

APRIL 16, 17.—There is each year a large and interesting spring show at Brighton. Probably the district being so far south is favourable to the early production of spring flowers. Force of circumstances necessitated holding the show a fortnight later than usual, but it did not appear to have suffered in any way; the main classes were well filled, the quality throughout was generally good, while some subjects were

of exceptional merit. As is usual, a large portion of the exhibits was in the Corn Exchange, and the remainder in the Dome adjoining.

In the Corn Exchange, Messrs. W. BALCHIN & SONS, of the Hassocks Nurseries, had a splendid non-competitive group, which included some plants of an extremely interesting character; at the back were Palms, Crotons, and *Lilium Harrisii*, then came panels of such plants as brilliant *Hippeastrums*, *Anthurium Scherzerianum*, *Dendrobium nobile*, *Cypripediums*, *Tetratheca ericoides*, *Acacia cordata*, *Boronia heterophylla*, the blooms of unusually large size; the front edging consisting of *Begonia Gloire de Lorraine*, *Primula verticillata*, *Diosma capitata*, *Campanula Balchiniana*, with small Ferns, &c. Messrs. BARR & SONS, King Street, Covent Garden, sent a superb collection of Daffodils, and a few spring flowering plants. Close by Messrs. ISAAC HOUSE & SON, Westbury-on-Trym, Bristol, had one of those charming collections of Violets they are in the habit of exhibiting. Mr. G. W. PIPER, Rose Nursery, Uckfield, had a stand of delightful Tea Roses, which included Admiral Dewey, an American sport of a peach-tint form; Caroline Testout, Liberty, Sunrise, &c.

In the competitive classes, groups of plants placed against the side of the Corn Exchange formed an attractive feature. In the open class, Mr. GEO. MILES, Victoria Nursery, Brighton, was 1st, with a very tasteful arrangement; Mr. E. A. WALLIS, Brighton (gr. Mr. G. Sims), was 2nd.

Tables of flowering and foliaged plants were given a place under the dome, and here Mr. G. MILES was again 1st; and Mr. A. J. BLAKE 2nd. Groups were also shown by single-handed gardeners, and in another class by amateurs.

An excellent table of Orchids was contributed by Mr. R. G. FLETCHER, Preston (gr. H. Garnett), and it comprised well-grown and bloomed specimens. Mr. E. A. TUCKER, Preston (gr. J. Harper), was 2nd.

Hyacinths were fairly good in the open class for twelve spikes, as also for sixes and three in other divisions. Tulips were very gay, the usual leading sorts being seen to good advantage. Messrs. TILLEY BROS. and Messrs. J. E. DAVIS & SONS, two local seedsmen, also offered special prizes for Hyacinths and Tulips, which formed bright and attractive patches of colour. Lily of the Valley, *Freesias*, *Lachenalias*, *Mignonette*, and Violets were also exhibited; but, strange to say, there were no entries for Primroses or Polyanthus in pots.

In the class for six double *Primulas* of the sinensis type, Messrs. MILES & SON, nurserymen, Hove, had the old double white in very fine character; the single varieties were only mediocre. Messrs. W. MILES & CO. were 1st with six *Auriculas*, having that number of plants of a charming yellow variety named Yellow Queen, of compact growth, very free and delightfully fragrant. A number of plants of this variety was shown as an extra exhibit, and a Certificate of Merit was awarded to it as a decorative plant.

There were lines of pretty table plants, some nice bushes of *Chrysanthemum frutescens*, *Deutzia gracilis* and *Dielytras*; a dozen *Cyclamen persicum* from Mrs. JENKINS, Burgess Hill (gr. Mr. C. Morrell), some of them probably from three to five years old, were marvels of high class culture, the flowers very large, and numerous produced. They deserved a double 1st, and they had the additional award of a Cultural Commendation. *Cinerarias* were seen in well-grown and flowered specimens, but with a tendency to the coarseness shown in present-day strains of this flower.

The best twelve pots of *Narcissus* came from Mr. E. A. TUCKER; some of the leading varieties were presented in good character.

Nice dwarf specimen greenhouse *Azaleas*, as well as those of the *Mollis* type, made a glowing front row to the orchestra under the dome.

Mr. W. BALDOCK, artistic floral decorator, Prince Albert Street, Brighton, had two tables of pretty floral decorations, which attracted a good deal of attention.

LEEDS PAXTON.

APRIL 20.—The usual fortnightly meeting of the above society took place on Saturday at Rockingham Hotel, Wade Lane, Leeds; the President, Mr. Parkinson, in the chair. Mr. Henry Butcher, gr. at Arksey Hall, Doncaster, discoursed to a well-attended meeting on "Grape Vines and their Cultivation." A vote of thanks was given Mr. Butcher for his instructive paper. Mr. Butcher, in acknowledging this, promised a paper on "Vines in Pots" on some future occasion.

ROYAL BOTANIC.

APRIL 24.—Contrary to previous practice, there were no competitive classes at the spring show held on Wednesday last in the Royal Botanic Society's Gardens, Regent's Park. The schedule included two divisions, one for nurserymen and trade growers, the other for amateurs and professional growers. For plants and flowers in either division, Gold, Silver, and Bronze Medals were promised, according to the merit of the exhibit. The award of a Gold Medal was accompanied by £3 in the first division, and £2 in the second; a Silver Medal with £2 and £1; and a Bronze Medal with £1 and 10s. This arrangement has doubtless been made owing to the difficulty there has been for several years past to obtain entries in the competitive classes. What

shows there have been have depended to a very uncommon degree upon the trade.

On the occasion under notice the exhibits were arranged in the corridor and conservatory, and most of them had been seen on the previous day at the Drill Hall. Thus there were the splendid *Rhododendrons* (*Azaleas*), &c., from Messrs. G. CUTBERT & SON, Southgate, but being placed in the conservatory each specimen had very much more space afforded it than at the Drill Hall (Gold Medal).

Messrs. CARTER'S *Cinerarias* were also grouped in the conservatory (Gold Medal).

Messrs. BARR & SONS, King Street, Covent Garden; Messrs. HOGG & ROBERTSON, 22, Mary Street, Dublin; R. H. BATH, LTD., Wisbech, all contributed collections of *Narcissus* gaining Silver Medals in the two first-mentioned cases, and in the other a Bronze Medal.

Messrs. B. S. WILLIAMS & SON, Victoria and Paradise Nurseries, Upper Holloway, London, N., had a group of Lilacs in pots, and a group of fine foliage plants and Orchids (Gold Medal).

We noticed only two gardeners exhibiting. These were Mr. Geo. Kelf, gr. to Miss ADAMSON, South Villa, Regent's Park, and Mr. THOS. ABBOTT, gr. to C. NEWINGTON, Esq., The Holme, Regent's Park. Mr. Kelf won a Gold Medal for a group of miscellaneous plants, and a Silver Medal for exhibits of Tulips and Hyacinths. Mr. Abbott had also an exhibit of flowering and foliaged plants (Silver Medal), and an exhibit of *Azaleas*, &c. There were three exhibits of floral designs, the best being one from Mr. HENRY ANSTEV, West Norwood (Silver Medal). The show could hardly be regarded as satisfactory.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

At the recent monthly committee meeting of this Society two new members were elected. Nine members are on the sick fund, and five on the benevolent fund. It was unanimously resolved, that a chairman and vice-chairman of committee be elected annually at the first meeting after the annual general meeting. Mr. C. H. CURTIS was elected chairman, and Mr. T. Winter vice-chairman, for the ensuing year.

READING AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT.

At the fortnightly meeting of this body of gardeners a paper dealing with "The Cultivation of the Gloxinia and other Greenhouse Plants" was read by Mr. H. HOUSE, gr. to W. POLE ROUTH, Esq., Oaklands, Reading. The speaker pointed out that *Gloxinias* could be well grown although the plants had to be grown in most gardens together with different species of plants. The chief points he touched upon were raising from seed by division of the tubers, &c. The exhibits were as follows: *Calla Eliottiana* from seed, from Mr. F. LEVER, gr. Hillside (Cultural Certificate); and *Gloxinia* blooms and plants. Mr. E. S. PIGG, The Gardens, Samoa, seedling *Amaryllis* (Cultural Certificate); and zonal *Pelargoniums* and a number of *Gloxinia* plants from Mr. HOUSE. A hearty vote of thanks was accorded to Mr. HOUSE for his practical paper, and to the exhibitors. The last meeting of the present session will be held on Monday next, when Mr. W. P. LASHAM will deal with the cultivation of Early Potatoes.

ROYAL HORTICULTURAL SOCIETY OF ABERDEEN.

A MEETING of the Directors of this Society was held on Thursday evening at the residence of the Secretary, Mr. J. B. RENNET, Advocate, Aberdeen, the Chairman, Mr. WM. PYPFER of Hillhead, presiding. There was a large attendance. At the outset the Chairman referred to the accession to the throne of His Majesty King Edward, who as Prince of Wales had long occupied the position of patron to the Society, and it was unanimously resolved to send an address of condolence with the Royal Family in their bereavement, and of congratulation to the King on his accession to the throne. It was resolved that the address be signed by the Chairman and by the Secretary, and be forwarded to Lord Balfour of Burleigh, Secretary of State for Scotland, for presentation.

Arrangements were thereafter made for this year's exhibition, which is to take place in the grounds of Gordon's College on August 22, 23, and 24, and judges were appointed for the various divisions.

CULTURAL MEMORANDA.

CYANOPHYLLUM MAGNIFICUM.—This handsome foliaged plant should be represented in every stove moderately. Peat and loam not too finely broken should form the chief portion of the rooting medium, while charcoal, sand, and sphagnum-moss may be added. The syringe must not be used overhead, for like many stove plants to which heat and moisture in the atmosphere are essential, the *Cyanophyllum* will be disfigured if the water is applied directly on the foliage.

LONDON: April 24.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., report an average attendance of buyers on today's market. The welcome spell of favorable weather naturally brings to hand a good many sowing orders for Grass and Clover seeds, which are executed at the moderate rates now accepted. Sainfoin is scarce and firm, whilst full prices are asked for Timothy, Cocksfoot, and Lucerne seeds. Quotations for Mustard and Rapeseed are advancing, but Tares move off slowly on former terms. As regards Bird-seeds, no fresh feature presents itself. There has been rather more doing in Blue Peas and Haricot Beans. Scarlet Runners continue cheap.

CORN.

AVERAGE PRICES of British Corn (per imperial qr.), for the week ending April 20, and for the corresponding period of 1900, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1900.		1901.		Difference.
	s.	d.	s.	d.	
Wheat	26	0	26	8	+ 0 8
Barley	24	9	24	7	+ 0 10
Oats	17	3	18	8	+ 1 5

(*Continued of Markets carried forward to p. xii.*)

ANSWERS TO CORRESPONDENTS.

"AMERICAN BALSAM:" *H. A. B.* The plant you describe under this name is, probably, *Impatiens Roylei*, figured in *Botanical Magazine* and *Botanical Register* under the name of *I. glandulifera*. It is a hardy annual, native of India, and naturalised in some parts of this country. The true *I. glandulifera* is a greenhouse annual, from Ceylon, figured in *Botanical Magazine* as *I. cornigera*.

ANTHURIUM: *E. D.* Double spathes of Aroids are not very uncommon. The Dendrobe is probably a hybrid variety.

ASPARAGUS BEDS: *Alpha.* It would be a means of improving the strength of the crowns, to refrain from taking any of the shoots for one year. The plant bears a good deal of seed, and if the stems which carry this are not removed whilst the seeds are still green and immature, numerous seedlings spring up and are left to impoverish the soil, and rob the proper plants of the nutriment they require, besides crowding the stems and making them weak. These seedlings ought to be exterminated.

BEDDING PELARGONIUMS DYING: *A. Cairns.* The symptoms observed in the plants sent for inspection suggest deep potting as the cause.

BOOKS: *Primula. Villa Gardening*, by Edward Hobday (Macmillan & Co., London).

COLEUS: *Carrigoram.* We believe the appearance to be due to the presence of a mite which feeds on the leaf. XL-All vapour will probably rid you of the pest.

CORRECTION: Mr. E. H. Jenkins writes: "In the note on *Montbretia germanica* on p. 217, it would appear that Messrs. Wallace are the raisers of the plant, but as a fact it is of continental origo (*M. Pfitzer*, I believe, is the raiser.)"

DOUBLE AND INVERTED MUSHROOM: *A. H.* Not uncommon—a kind of natural grafting.

FAIRY RINGS: *Lady Amateur.* The continually increasing diameter of the circles is due to the simple circumstance of the prior individuals having exhausted the nutritious substances necessary for the support of their species. The rings are originally formed by a single plant, and the fungus extends outwards in search of nutriment. This explains why one ring does not cross another, and the consequent irregularity when circles become contiguous. The outward extension is brought about by the mycelium or "spawn," in garden parlance, and not by spores, which, being light, would be carried by the wind in every direction, instead of in compact circles. Nothing short of heavy dressings of gas-lime will rid the turf of the fungus.

IRIS (LÆVIGATA) KEMPERI: *Iris.* If you could make a kind of bog by excavating a broad and shallow hole, puddling the sides with clay 2 or 3 inches thick, and afterwards line the side and bottom with rough peat cut as sods a foot square, and 6 inches or more in thickness, and afford a dribble of water constantly so as to keep the water sweet, *Iris lævigata* would grow very well planted at the side or on the edge, so that their roots could reach the water-laden soil. Obtain the bulbs in August or Sept., and plant them about 15 inches apart in small holes, filling in around them with decayed peat, leaf-mould and sand. Once planted, do not disturb them again without good reason. In your county the plants will need no protection against frost. Could you not conduct the rain-water from the roof of your house or glasshouses into the pool, as well-water is not the best sort of water? Or perhaps you

have access to a stream, which, next to rain, is the best water.

MELONS GROWING IN POTS: *Alpha.* The Melon is quite easy to grow in a pot holding a bushel of soil, providing there are means of keeping a warmth of 75° to 80° in the soil, and a minimum top warmth of 70°. In a bushel of soil two plants may be grown, but one would be better. Plant at about 6 inches below the rim, and mould up when the bine has got strength. The bine should be trained on thick wires, or wooden rods running parallel with the roof glass, and about 1 foot distant from it. The small varieties such as Green Gem, Golden Gem, Cabool, Beechwood, Queen Anne's Pocket, Gunton Scarlet, Syon Perfection, Frogmore Orange, Syon House (early) should be chosen. A plant in a pot should not carry more than three fruits.

MILDEW ON PEAS: *Lady Amateur.* Sometimes the mildew spreads from Barberry bushes and other plants, weeds, &c.; and it rarely affects Peas until the approach of cool nights, its spread being greatly favoured by a dry state of the soil along the rows—a natural condition commonly met with at the end of the summer. The land on which Peas are growing should be mulched either all over, or for at the least 18 inches on each side of the rows, and kept consistently moist till the crop is gathered. All exhausted Pea-plants should at once be cleared out of the garden, as they are sure to be, or to become mildewed, and the pest passes to younger crops. There is no doubt but that the Bordeaux Mixture, or liver-of-sulphur at the rate of 1 an oz. to a gall. of water would have a good effect, if used once a fortnight in gardens infested with the Pea mildew.

MISLETO FOR GRAFTING PURPOSES: *W. D.* This operation is rarely successful, and we should doubt if any real union, such as takes place say between a Pear or an Apple and the stock upon which the scions are placed, ever occurs. The Mistleto is a plant parasite, its roots penetrating the layers of the wood when of long standing, and bringing about the death of the tree when very abundant. If you advertised in our columns you would have no difficulty in procuring shoots of one or more years old.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*T. R. S.* *Iris japonica*. The *Primula* is one of the forms of *Oxlip*.—*E. L. B.* We cannot undertake to name varieties of *Narcissus*.—*Quez.* *Lobelia Rhynchoptalam*.—*Enquirer.* *Ruscus racemosus*, the so-called Alexandrian Laurel; supposed to have been used in wreaths by the Greeks.—*A. B. C.* 1, *Forssythia suspensa*; 2, *Skimmia japonica*; 3, *Thuya orientalis*; 4, *Aucuba japonica*, male plant; 5, *Olearia Haastii*; 6, not recognised; 7, one of the forms of *Cupressus Lawsoniana*.—*R. W.* 1, *Masdevallia caudata Shuttleworthii*; 2, *M. c. xanthocorys*; 3, *Angraecum Ellisii*; 4, *Spathoglottis plicata*; 5, *Bletia Gebinae*.—*W. T.* *Lycaste lasioglossa*.—*Down, Hants.* *Cœlogyne ochracea*.—*C. S. & Co.* *Coccoloba platyclada*.—*E. W.*, *Merionethshire.* *Cymbidium pendulum*, a common species.

PROTECTION FOR TENDER ROSES: *Enquirer.* The better method is to take up the more tender varieties with care, and lay them in thin in trenches dug 1 ft. deep, covering the roots and the stems in the case of bushes with the soil. These occupying but a small space, can be readily covered with bracken or straw stable-litter in times of severe frost, but always uncovering them with a return to mild weather. By another method the plants may be protected where they grow by moulding up the bushes in the same manner that Potatoes are moulded up; then with a small quantity of bracken or straw they may be made safe against all ordinary frosts. In the case of standards, the same sort of materials may be tucked in among the branches, or the head may be bent nearly to the ground and fixed to a short stake, and the head protected as in the other case. In every case the heads of standard Roses should be reduced in size by cutting back the longer shoots, and afterwards tying in the whole of them, so as to give compactness; and the same method, but to a lesser degree, may be pursued with the bushes. Roses on walls may be protected with a straw thatch, or better, with thatched hurdles, these being removable in mild weather.

RAISING CONIFERS, RHODODENDRONS, TIMBER TREES, &c., IN PRIVATE GARDEN: *A. B. C.* (1) No, unless occasional female or boy labour be engaged. (2) Wet land; No. March too early, except very mild and showery. (3) Transplant two-year-old seedlings forthwith, and afford them permanent light shading with reeds, Pea-sticks, &c. (4) Any intelligent young man used to garden work could carry out the directions given him by the head gardener. (5) Without an inspection of the place, we could not state what the salary should be—probably £75 to £85 with house and the usual perquisites.

RICHARDIAS PLANTED OUT OR KEPT IN POTS: *Nycterrina.* To keep the plants in the pots in which they bloomed, and rest them turned on their sides on a bed of coal-ashes under a wall facing west, is the better method with such as are wanted for the production of early spathes. The planting-out method is more suited to late spathing plants. Do not "dry off" a potful of *Richardias* as you would a deciduous bulb.

ROOTS ON THE RODS OF VINES: *Constant Reader.* Too much humidity, or in other words, too little ventilation is the cause.

STREPTOSOLEN JAMESONI (SEE P. 268) AND JUSTICIA CARNEA: *Anxious.* The former will grow in good turfy loam two-thirds, leaf-mould, and peat together one-third, and as much sharp sand as will afford passage for the water. When planted in a border, say, of 2 feet in width and depth, the drainage should be well made, but not excessive in regard to quantity of materials, and the soil should be made firm. The latter plant is one of the easiest to cultivate in the stove. It does well in a mixture of half peat and turfy loam, used in a rough state, and well compacted together. The plant succeeds as a pot-plant, although aged plants may be put out in the borders in warm houses. Cuttings may be taken and put in singly in the spring, striking them in a close hot-bed frame, and keeping them therein, with ventilation afforded after the rooting is completed, and they have been shifted into 60's or 48's. In the summer months these plants do very well in an ordinary frame that is opened at 9 A.M. and closed at 4 P.M., and in high summer afforded air day and night. Plants may be stopped once or twice, or if early flowering is required not at all till the first flowers are spent. Rested after flowering for a month they may be started anew into growth and will flower in the autumn. During late autumn and winter keep rather dry and at the cooler part of the stove. This plant, as also *Streptosolen*, is benefited by applications of manure-water.

SUCCULENTS: *Kingwood.* Send when in flower.

TEMPERATURE OF TILLED GROUND AND TURF: *Alpha.* The tilled ground gets more warmth from sunshine, and parts with it less rapidly than that under grass; hence the reason why a thermometer placed at night on the grass registers a lower degree of cold than one on arable or tilled land.

WOMEN AS GARDENERS: *J. Maers.* We look upon this as a mere fad of the day. There are no women in the country with the requisite knowledge of horticulture who could compete with well-trained and experienced men. Where are the first-class fruit growers, plants-women, Orchid specialists, kitchen gardeners? They simply do not exist; nor is the training afforded in schools of horticulture intended for the instruction of women calculated to furnish them. When we see women coming to the front in all branches of gardening, we shall believe that man's position as a head gardener is being menaced. In market gardens and many private ones, women are commonly employed at light work.

YOUNG VINE-SHOOTS DYING: *Anxious.* The foliage is thin, and the shoots very weak, pointing to a bad state of the roots. You should examine the border, and send roots and soil from various depths to us for examination.

COMMUNICATIONS RECEIVED.—*N. F. Barnes.*—*F. T. M.*—*A. F. T.*—*P. W.*—*J. O'B.*—*E. N.*—*Capt. Walter.*—*W. K.*—*A. D.*—*H. T. M.*—*W. A. C.*—*Newnham.*—*C. A. B.*—*J. F.*—*M. Cooper.*—*W. Cutbush.*—*Barn.*—*J. A.*—*Rhododendron* not found with vine roots.—*X. Y. Z.*—*A. C. W.*—*D. S. F.*—*A. O. H.*—*Sir M. F.*—*W. J. B.*—*J. T. B.*—*C. B. C.*—*W. B. H.*—*J. C.*—*E. C.*—*Dr. Debono, Malta*—*W. G. & Co.*—*W. T. M., Ottawa.*



TEA ROSE, CATHERINE MERMET, FROM THE COLLECTION OF THE LATE
MR. GIRDLESTON.

THE ROYAL HORTICULTURAL SOCIETY.

THE PROPOSED NEW GARDEN.

THE PRESIDENT'S OPENING SPEECH—MR. VEITCH'S SPEECH ON BEHALF OF THE COUNCIL'S PROPOSAL—MR. SHEA SECONDS—MR. ARTHUR SUTTON—A PERSONAL QUESTION SETTLED—DR. MASTERS AND A WHITE ELEPHANT—CHISWICK AS IT WAS—TWO LETTERS—ONE FROM A RESIDENT IN THE NEIGHBOURHOOD—SIR WILLIAM THISELTON-DYER'S LETTER—MR. H. J. ELWES SUPPORTS THE AMENDMENT—EULOGIUM ON SIR W. THISELTON-DYER'S LETTER—SIR MICHAEL FOSTER'S LETTER—MR. ROUMIEU SUPPORTS THE AMENDMENT. AS DOES REV. G. M. ENGLEHEART—MR. PERCY WATERER SPEAKS WELL OF THE LAND—MR. SHERWOOD AND THE HALL SCHEME—£3,000 PROMISED ON THE SPOT FROM THREE FELLOWS—THE PRESIDENT LAMENTS THE MUTILATION OF CHISWICK—THE AMENDMENT CARRIED BY AN OVERWHELMING MAJORITY—A POLL DEMANDED—THE DEMAND WITHDRAWN—A VOTE OF THANKS TO THE PRESIDENT CARRIED WITH ENTHUSIASM.

A GENERAL Meeting of the Fellows of the Society was held at the Drill Hall, Buckingham Gate, Westminster, on Tuesday, April 23, "to consider, and, if approved, to adopt, the proposal of the Council to purchase on behalf of the Society, for the purposes of its new gardens, forty-eight acres of land in the county of Kent, forming part of Rabbits' Farm, and adjoining the Little Boys' Home at Darenth."

Sir TREVOR LAWRENCE, Bart., the President, occupied the Chair. The meeting was very largely attended, the corridors and staircases even being filled by those who could not find space in the room.

The names of a large number of ladies and gentlemen were submitted for election.

The PRESIDENT then said: I do not desire to take up your time unnecessarily, and therefore I will confine what I have got to say within a very short compass. I should like to clear up one misapprehension, which I find one of my friends is labouring under. My friend, to whom I refer, has got an idea that I had been opposed to the acquisition of a hall and offices in London for purposes of the Society—supposing such an acquisition were to be within the reach of the means of the Society. I have many times over expressed my own opinion that by far the best way of celebrating the Centenary of the Society would be by the provision of a hall for its meetings, and offices for its work, if any arrangement to carry that out could possibly be come to. I have taken a great deal of trouble to ascertain whether there was any site which would be suitable for the purposes of the Society, and I am bound to say that I have entirely failed. I have placed myself in communication with well-known auctioneers and others. Numerous sites have been mentioned, and the only site that I am aware of which would at all have suited the Society was one which was suggested by Mr. Leopold Rothschild, who is a well-known gardener and greatly interested in the Society, but that site could only be obtained for a ground rent of at least £2,300 a year. This was absolutely and entirely beyond the reach of the Society.

Now with regard to the business before the meeting to-day, I have no doubt that we do not all agree. It is hardly to be expected that so large a gathering of the Society as I see before me should be of the same mind. I may say, and I am sure I speak on behalf of the members of the Council, that the matter which is to come before us is one of great interest and great importance to the Society, and I beg to say, so far as the Council is concerned, that their position is this. Last year at the Annual Meeting a proposal was brought forward, no doubt emanating from the Council—that the Centenary of the Society should be celebrated by the acquisition of a new

garden. That was adopted without a dissentient voice at a large meeting. At the Council meeting in February, 1900, a certain amount of difference of opinion declared itself; and there was a further meeting in April, 1900, at which the question as to whether the Centenary of the Society should be celebrated by the acquisition of a new garden was discussed at very considerable length, and as a result of a division on the subject, the previous decision of the Council at the Annual General Meeting was endorsed by a large majority. That being so the Council felt themselves in this position: They had received a mandate from the Society to look out for a new garden, and it is in furtherance of the desires of the Fellows—whatever the opinions of the Council may be—that they have acted as they have done. They are, of course, the creation and the servants of the Society, and are bound to endeavour to carry out the sufficiently declared wishes of the Fellows—it is in furtherance of their desires and wishes that we are met to-day. That being so, the Council have looked about in various directions. Numerous sites have been proposed, some nearer and some further from London than the site in question, and a large number have been visited. Some of them have been unsuitable on account of the inherent qualities of the ground, and others on account of the price, or for other reasons. The Council endeavoured to find a suitable site, and I wish it to be clearly understood that the Council did this in pursuance of the instructions and the mandate of the Fellows. The Council placed the matter before the Fellows, and the Fellows agreed to the proposal which will be placed before the meeting very shortly. If the Fellows declare themselves against the proposal, then of course it will fall to the ground. The Council have acted solely and simply as it appeared to them to be right, having regard to what had taken place at the Annual General Meeting and the subsequent meeting of the Society last year. I only say this because some of my friends have thought that if the proposal were not carried the Council would make it more or less a cabinet question. The Council are simply and solely making this proposal on the instructions and mandate of the Fellows. The matter is entirely in the hands of the Fellows, who are in a position to accept or negative the proposal as they like. At Easter I had an attack of influenza, and could not attend the meeting of the Council, but so far as I am personally concerned I am absolutely impartial on the subject. I have never seen the site, but several of my colleagues have done so, and you will hear what they have got to say. I would only add that of course the Council would be very unwilling to put the Fellows, all over the country, to the trouble of voting on this subject if it were not necessary, and I sincerely trust that we shall be able to discuss this matter with perfect good temper and good humour. We all, every one of us, are anxious to do that which is to the advantage of the Society. The Society, I am glad to say, was never in a more flourishing position, and I think that, perhaps, the Fellows who are present, and the Fellows who are absent, will at all events give the Council this credit. They will recognise that the efforts of the Council have not been altogether without a considerable amount of success in the past, that they would not willingly, or knowingly, make any proposal to the Fellows of the Society that they did not think, at all events, possessed very considerable elements to recommend it to the Fellows. I will now call upon Mr. Veitch to propose the resolution.

Mr. VEITCH then proposed:—"That the Council be empowered to purchase on behalf of the Society, for the purpose of its new gardens, forty-eight acres of land in the county of Kent, forming part of Rabbits' Farm, and adjoining the Little Boys' Home at South Darenth." He reminded the meeting that he was on the Committee, and he would give a few particulars about the site. In considering the present proposal, it would be desirable to look backwards to the old site at Chiswick, because there were possibly some Fellows who had never visited Chiswick.

They must bear in mind, in considering the question, that Chiswick Garden was the garden of the Royal Horticultural Society of Great Britain. It was not an ordinary garden of an ordinary Society. The Society needed a garden where all that was necessary to be done could be done; where trials could be properly carried on, and where the work could be performed in a manner befitting the position of their Society at the present day. Let them remember this; whatever garden they had it would take some years to bring it into proper condition. With regard to Chiswick, they had twelve acres of land altogether. It had been a garden for many years, and the whole of the soil had become virtually exhausted. The London main drainage had taken away the moisture which was necessary to make good trials. It was becoming more and more surrounded by buildings, the smoke nuisance was becoming worse and worse, and there was increasing difficulty in carrying out proper trials. If that were the case now, what would it be in another five or ten years time? That was a very important question they had to consider. Then a large amount of the twelve acres was covered with buildings—glass-houses and other buildings—so that they had a very small portion left—not larger than a suburban garden. It could not be increased—and if it could, the Council would advise that it should not be increased. Was it, he would ask them, a suitable garden for the Royal Horticultural Society? The first thing the Committee had to do was to go down to Chiswick and talk over the whole question with Mr. Wright, the superintendent, as to what would be required. He did not propose to trouble them with the financial question—that would be dealt with by another member of the council; but he would tell what had been done by the Council, and what was required at their new gardens.

They took into consideration the character of the soil and the distance from London, and they came to the conclusion that they ought not to be nearer than twenty miles from London, and that there should be proper facilities for reaching the place from London. The Council had not treated the matter in a haphazard way. They inserted advertisements in the newspapers where they would be seen by land-agents and others. They had a great many answers to the advertisement—perhaps forty or fifty—and each was distinctly considered on its merits. A great many were put aside at once, for various reasons, as the President had already explained. The soil would be unsuitable, the locality was too far from any good railway station, the situation would be unsatisfactory, or the price would be prohibitive. A good many sites were inspected, one, for instance, at Reigate, another at Slough, another at Feltham, and another at Woking. He mentioned that to show how difficult it was to find a site suitable in all respects, quite recently having heard of the site they were considering that day. He was not going to tell them it was a perfect site, but he could tell them that it was by far the best site they had heard of; and, therefore, the Council felt that they were only doing their duty in bringing it to the knowledge of the Fellows. It was twenty miles from London. The situation of the site was exposed. The Council considered that a great advantage. They made trials in sheltered places, and the reports of those trials were valueless to those Fellows who lived in the North of England and in the more exposed parts of the country. Then the site they were considering had natural drainage, therefore the expense in the present case in that respect would be *nil*. If they took over the land, there were no heavy crops, and there would be little compensation, if any, to pay. The exposed nature of the site could be got over. The first step would be to plant a belt on the north and east sides, and while they were sleeping that belt would be growing. Already some members of the horticultural trade had expressed their willingness to give the Society shrubs which would be useful for the belt, an example which he was sure would be followed when it became known. If they purchased the site they would first have to

have plan thoroughly well prepared, and a Committee would have to be appointed to fully consider the best way of laying it out. Roads should be planned, and paths made, and the ground would be divided for the various purposes. He did not agree with any glass being put there at present. Now he did not wish to say anything to hurt anyone's feelings. But letters which had appeared in the *Gardeners' Chronicle* were public property. Their excellent friend, Mr. H. Cannell, wrote to the *Gardeners' Chronicle* saying that he had several sites in his mind. Seeing that the Council had had the mandate from the Fellows for a year, he thought Mr. Cannell might have communicated with the Council about those sites. Then there was a letter from Mr. Sutton which advocated a hall instead of a garden. He (the speaker) was as much in favour of a hall as he was of a garden, and therefore he should not quarrel with them about that. But had they considered their charter with reference to the building of a hall? If not, he would strongly urge them to do so before they embarked on such a scheme. Mr. SUTTON distinctly advocated a hall, yet it was only last year he got a deputation from the Council to go to Reading to look at a site! Mr. SUTTON had a perfect right to change his opinion, but his action seemed incongruous. Another gentleman said they wanted a garden, but it must be on the North of the Thames! Another said it should be on the South of the Thames! One said it must be at Mitcham, and another said it must be at Feltham! At any rate, there was a difficulty in selecting a site; and the Council submitted the site they were now considering as the best which could be found. Another correspondent objected to the approach to the garden. Well, if they were looking to every point and detail, he did not know where they would stop—and if they did, what were they going to pay for them? Another gentleman spoke of the need for better hotel accommodation. He would only say that the demand would create the supply, and a timely word to the superintendent that they were going to the gardens, would bring about all that was necessary in that matter. Then, as to the labour question. Where could they go in Great Britain where that was not a difficulty? In his own experience it had been a difficulty, but by students and proper facilities for teaching, the labour question would be reduced to a minimum. Then the price of the land was reasonable, and the Council did not propose to buy at building, but at agricultural, value. He thought ten acres might be planted soon, and if the Fellows cared to purchase, the Council would be glad to carry out their wishes in detail. It was the best site they had been able to meet with, and he honestly meant it when he said that the land would grow in value, and although the Society was not a trading society—and he hoped it never would be—it would be satisfactory for the Fellows to feel that they were purchasing land which was a good asset. Beyond that he would not go, but would now move the resolution.

Mr. SHEA seconded. He said there was no one in that room who would not like to have both the hall and the garden. It was a legal question. Their charter said the Society was only for strictly horticultural purposes. Those words were introduced at the time to prevent the possibility of a recrudescence of such questions as wrecked the R.H.S. in the South Kensington days, such as garden parties and baby shows. But what would be the cost of a hall? They could not purchase the site for a hall under £50,000, and it would run into six figures to erect a suitable hall. He asked them not to do anything to disturb the success of the R.H.S.

Dr. MASTERS rose to a point of order. They were called to consider the proposal before them, in which no mention was made of a hall.

The PRESIDENT thought Mr. Shea was simply working out his argument.

Mr. SHEA said the Society could not be expected to have its arms tied behind its back. The Hall question had been made a most powerful argument against the formation of a new Chiswick, but it

was now dead as a door nail. In so far as the action of the Society and its funds could make it possible to create a separate establishment.

A FELLOW: Has the choice between a hall and a garden ever been decided?

The PRESIDENT: I don't know that the matter has ever been brought in this naked form before the Society, but we are here to-day to discuss a different resolution, and any proposal with regard to a hall would be clearly out of order.

Mr. ARTHUR SUTTON explained that he considered it would have been a great mistake for the Society to have gone to Limpsfield, and it was more than that: the President said the council would be glad to consider any sites which he could mention to them. As a means of "marking time," and of preventing a serious mistake he, against his will, mentioned a site which was more suitable than the other. The Council was strongly in favour of having an educational establishment in connection with the garden, and there was a proposal to purchase a building at a cost of £3000. There was a house which he thought would be adapted on the Reading site, and there were colleges near. That was why he mentioned the site. He felt—and the vast majority of the members felt with him—that a garden was not the best thing to celebrate the centenary. As to the mandate spoken of by the President, he felt quite certain—with due deference to the Council—that at the meetings in question no one realised that in adopting the resolution proposed by the President they were committing themselves to such a policy.

The PRESIDENT: Oh!

Mr. SUTTON (continuing): None of them thought they were committing themselves to celebrate the centenary in that manner. They may have been misled, or may have misled themselves, but they did not give the mandate spoken of. The successful condition of the finances had been spoken of. He did not believe that the extraordinary number of new members was due to the failure or success of the Chiswick Gardens, nor did he think that the formation of a garden twenty miles away would add a dozen new members in the course of the year. The success of the finances was due to their fortnightly shows. He would propose the following amendment:—"While thanking the Council for the trouble they have taken in seeking a site for a new garden, this meeting is of opinion that the acquisition of the proposed site is not the best means of celebrating the forthcoming Centenary of the Royal Horticultural Society."

Dr. MASTERS seconded. He said he had two very important letters which he would like to read, but before doing so he would like to say a word or two. Mr. Veitch had alluded to a valuable asset. Well, a white elephant was a valuable asset, but it cost a great deal to feed, and the best thing they could do with that white elephant was to get rid of it. That was what they ought to do with the site in question. He had known it from youth, and it was nothing but a barren Kentish down, with a good sprinkling of loam on the surface and flints innumerable. Everything would have to be done. They would have to put up walls, houses, sheds, trees—for there was not a tree on the place—and all this would have to be done at an enormous cost. That was why he said it would be a white elephant. He could recollect Chiswick for many years, and at a time when it contained something like thirty or forty acres. The Society fell into difficulties, with the result that it could not keep up those acres, and the garden was reduced to a God-forsaken appearance. After some years they had the good fortune to get rid of the greater portion of it, and then found themselves with some twelve acres. As to the forty-eight acres now proposed to be taken, they would prove forty-eight halters. The first letter he would read was from a personal acquaintance who resided in the district, and was as follows:—

"I hope the mad scheme of the Royal Horticultural Society's Council will be defeated to-morrow without resort to the ballot, because a ballot,

without at same time furnishing each Fellow with a report of the discussion, will be sure to back the Council's project—few Fellows knowing the merits of the case. The land at Rabbits is worth nearer £50 than £80 an acre! A neighbouring farm sold not long ago for £30 per acre. Another (a "bijou") holding of 40 acres close by, with house, barn, stabling, and 15 acres of the splendid soil with matured Apple and Plum trees, did not bring over £100 an acre overhead. The walk from Farningham Road Station up hill, dusty, smoky, and nearer 1½ than 1 mile, is a most uninviting stretch, there is not the least chance of a conveyance, and the whole place is deluged with smoke from the big paper-mill. Surely 10 acres in a choice surrounding like Windsor, Richmond, or Hampton Court, would be ample, and obtainable at a rental less than the charge incurred at Rabbits. Why not appeal to the KING in the circumstances, and see if his regard for the traditions of Chiswick will not procure us a 'pied à terre' worth having? To purchase the land at Rabbits is madness!"

Dr. MASTERS, resuming, said he regretted having to use the word "mad," as he intended no discourtesy to the Council. He would not have used it himself.

Several Fellows called for the name of the writer.

Dr. MASTERS declined to give it, as he had no authority to do so.

The PRESIDENT: We ought to have the name of the writer.

Dr. MASTERS: No.

Members of Council: Then the letter is of no use.

Dr. MASTERS then, at the suggestion of the President, read some portions of the following letter from Sir William Dyer, addressed to Dr. Masters:—

"I am prevented by other public engagements from being present at the meeting of the Royal Horticultural Society to-morrow.

I feel bound, however, though with much regret, to express my uncompromising dissent from the proposals of the Council, and for the following reasons:—

1. When the Society was ejected from South Kensington in 1888 it found itself, as far as London was concerned, without a home. We have it on the authority of the President that the disastrous enterprise on which it had entered at the invitation of the Commissioners for the Exhibition of 1881, cost the Society £80,000. If the advice of one man, at any rate—Sir JOSEPH HOOKER—had been followed, that adventure would never have been attempted. The Society engaged upon it with a light heart, without any adequate appreciation of the financial responsibilities it involved. It appears to me that unless wiser counsels prevail it is doing the same thing now.

It is worthy of notice that in the summary of the labours of the Commission which appear in this morning's papers, a veil is wisely drawn over its efforts in the supposed interests of horticulture.

2. We are told in the Council's report for 1888 that "the first work of the Council was, of necessity, to secure a suitable home for the Society." It cannot be said that to this day that work has been accomplished; and until that has been done, the Society is bound by every consideration of regard for its own efficiency and self-respect to postpone every other claim, however pressing.

3. The Council further state in the same report that they have "entered into a temporary agreement for the use of the Drill Hall." They add that they "fully recognise the drawbacks attaching to the Drill Hall." Those drawbacks have not diminished, but are intensified by the growing activity and larger life of the Society.

4. In the Report for 1889, the Council state that they "recognise as fully as anyone can do the great desirability of securing more suitable premises than the present Drill Hall affords." In the course of the following year H.M. the KING (then PRINCE OF WALES) was induced to open the Temple Show. The Council presented an address, in which they

informed His Majesty that the Society "is now devoting its energies to the provision of a great national want—a central Metropolitan Hall, or home for the horticulturists of the United Kingdom." The KING replied that, "I sincerely hope your labours in that respect may be successful, for I feel sure that such a Hall will be of the greatest use and advantage." Now, I think that few will have the hardihood to deny that the adoption of the Council's present scheme will indefinitely postpone the realisation of His Majesty's hope. I cannot myself conceive a body pledging itself more responsibly to the execution of a project, than by submitting it deliberately for Royal approval. Nor do I think there can be two opinions as to the indecorum of substituting for it, when that approval has been sought and obtained, without sufficient reason, something of an entirely different character.

5. The Council at that time at any rate never wavered in impressing on the Fellows its intention of keeping the provision of a Hall steadily in view. In the Report for 1890 it states:—"The most notable feature in the past year's work has been the excellent commencement made for raising a fund for obtaining for the Society more suitable and worthy premises, and for building a Horticultural Hall to meet the requirements with regard to light and space, and position, not only of our own Society, but also of the numerous kindred associations of this great metropolis." It will be observed that we have it on the authority of the Council that the premises are neither suitable nor worthy, and that light and space are deficient. Will anyone venture to say that these defects have in any way been diminished? In the accounts of this year, for the first time appears an item, only amounting it is true to the modest sum of £66 16s. 10d., but still a beginning for the "Horticultural Hall." In 1892, the investments amounted to the respectable sum of £500. By 1900 they had reached some £8,000. For some years the Society has been able to lay by on an average £1,000 a year, and it can hardly be doubted that at no very distant period it might be in a position to undertake the realisation of the scheme for the much-needed Hall. It is a matter of common knowledge amongst those who have interested themselves in the work of the Society, that the investments were commenced as a nucleus for the fund for the erection of a Hall, and what I have stated above confirms the fact. It is impossible, therefore, to regard with satisfaction the alienation of the fund to some other purpose.

6. It is now proposed to purchase 48 acres of land an hour's distance from London. It is, in my opinion, perfectly absurd to say that what took place on April 25, 1900, constituted "a mandate" on the part of the Society at large to do anything of the kind. The mandate which the Council has again and again imposed upon itself, with the entire approval of the Fellows, is the provision for it in the metropolis of an adequate and permanent home.

7. To this now proposed site it is desired to remove the work at present done at Chiswick, and, whatever that may mean, "the whole of the Society's operations." Now Chiswick, as at present administered, attracts very few visits from the Fellows at large. It may be said with confidence that a garden at South Darenth would, by its comparative inaccessibility, be practically withdrawn from the cognisance of the Fellows altogether. Yet Chiswick as it stands, costing £1800 a year, is a dead weight on the resources of the Society, and I very much doubt whether the Society gets anything more than a sentimental equivalent for its expenditure. At any rate it is easily accessible, which the new garden certainly will not be.

But if Chiswick is a dead weight, South Darenth will be a crushing one. The purchase of the land will sweep away one-half of our investments. Chiswick is itself the most expensive garden I know of. Its extent is 12 acres, and it costs £1800, or £150 an acre to keep up. A garden may be run with the best skilled labour for about £60 an acre. But the labour employed at Chiswick is only in part skilled, and therefore inefficient. With very good manage-

ment, the South Darenth garden might be run for some £3000 a year, and this could be met by appropriating the present cost of Chiswick, together with the whole of the surplus income of the Society. The proposed site is, admittedly, as bare as one's hand. Its efficient equipment will probably cost some £10,000. This will sop up the rest of the Society's savings, and leave it some £6000 to the bad. It will be observed that in scheming the finances, I am taking the most favourable view, but one which, in my opinion, experience of the Society's methods of administration by no means justifies.

8. And if this precious scheme is realised, what advantage will it be to the general bulk of Fellows? In my judgment, none. We shall practically go back to where we were in 1888; our carefully accumulated savings spent, our income mortgaged, our London home still temporary and inadequate; and the scheme long cherished by all who have the welfare of the Society and of national horticulture at heart, of seeing the Society possessed of a worthy and dignified home, will receive its death-blow.

9. Behind all this there must be some ulterior influence and motive; and I feel bound to say, with deep regret, that I think the Council are wanting in their duty to the Fellows in not fully disclosing what their aims and objects really are. I myself, from perfectly frank, though independent communications which have been made to me, have no sort of doubt as to what those aims and objects are. It is desired to establish in the south-eastern counties a horticultural college. A good deal might be said on that scheme, but it is immaterial to the present issue. I say, however, deliberately, that it is not fair or reasonable to divert the funds of a national society to the support of what is essentially a local object, in which the bulk of our Fellows, drawn as they are from all parts of the country, can have not the remotest practical interest; and I am very much disposed to think that this contention might be supported by legal means.

Having, with many of my friends, laboured hard to resuscitate the Royal Horticultural Society, I cannot refuse to state my deliberate opinion of the present proposal. It is abundantly evident that if the Society sticks to its proper functions—the promotion and encouragement of horticulture in its highest development amongst the community—it will prosper. Twice in its history it has abandoned this modest but honourable path, and twice it has been landed in insolvency. It might have learnt from the bitter lesson of experience that its usefulness depends on its being master of its own resources, and free from all external entanglement. *W. T. Thiselton-Dyer, Kew, April 22, 1901.*

Mr. H. J. ELWES considered that the Fellows should have heard the whole of the letter. The case had never been put so clearly or so fully; without the knowledge it contained they would be voting in the dark. As to the "mandate," the matter had never been properly before the Society, and but for the *Gardeners' Chronicle* they would have had no details. Sir Michael Foster had written to him to say that the one thing they wanted was a proper exhibition hall. If they took the garden to South Darenth they would be landed into difficulties of which they had no possible conception. He begged them not to make up their minds until they had seen Sir William Dyer's letter.

Mr. S. F. ROUMIEU warned the Society to be careful before purchasing a piece of derelict land. He had known it for forty-five years, before that wonderful and marvellous railway which now went there was made, and he could safely say that the proposal to purchase it was properly termed a "mad scheme." Did they know there were two lunatic asylums near! and that there was a small-pox hospital there!

The PRESIDENT: Question.

Mr. ROUMIEU: The question was whether they were to commit themselves to such a course.

The PRESIDENT: It has nothing to do with lunatic asylums.

Mr. ROUMIEU: Then look at the time it took to go there on the South-Eastern and Chatham Railway. He was very much obliged to the *Gardeners' Chronicle* for bringing the matter forward. He hoped they would soberly consider the matter. The Council seemed to be saying, "Your money or your life." He did not intend to part with either. They had been told that the drainage was perfect. There was another drainage which was also perfect, and it would soon drain their coffers dry.

Rev. G. H. ENGLEHEART said he did not accept the statement that a hall would be contrary to their charter, nor did he consider that the discussion on the question was out of order.

The PRESIDENT: I said on the present occasion.

Mr. ENGLEHEART said, to raise a point of legality such as that would be unworthy the traditions of the Society. The matter had not been ventilated. It needed careful thought, because it went to the first principles of the Society. When Chiswick was instituted, the great gardens that now existed up and down the country were not established or thought of. A new hall they must have, and "where there's a will there's a way."

Mr. PERCY WATERER said the farmers in the neighbourhood considered this as the best land in Kent.

Several FELLOWS: What is it rated at?

Mr. WATERER said he did not know that, but he had been told that it would be cheap at £80 an acre.

Mr. N. N. SHERWOOD said, if £29,000 could be got under Baron Schroder's scheme years ago—and that not for the centenary—what could not the lovers of horticulture do now for a hall? The money could be easily got.

At this point Mr. Elwes, Mr. Sutton, and Mr. Sherwood each promised £1000 for a hall.

The PRESIDENT said he must adhere to the fact that the Fellows gave the Council a mandate, and he read the resolutions passed at the time. If those resolutions, he said, did not constitute a mandate, he did not understand ordinary English. He considered that a greater misfortune never happened than when they had to part with some of the Chiswick Gardens. The ground at Darenth was surrounded with market gardens, and if they did not buy it, it would be sold in the open market.

LARGE MAJORITY AGAINST THE SITE.

The PRESIDENT then put the amendment, which was carried by a large very majority amid enthusiasm.

Certain members of Council demanded a poll under the bye-laws.

The PRESIDENT, after consultation with members of the Council, said he was quite willing to accept the feeling of the meeting, and the Council took that view to a very large extent to avoid internal dissensions in the Society. His mind went back to the time of internal dissensions in the Society, and he knew with what result. He should be exceedingly sorry to have any share in anything which seemed like an endeavour to force anything by what might perhaps be thought to be a side wind on the Fellows.

Mr. ELWES, in proposing a hearty vote of thanks to the Chairman, congratulated the Society on having at its head such a President.

The motion was carried with enthusiasm, and the proceedings then ended.

THE ROYAL HORTICULTURAL SOCIETY.—We have received other letters, among them from Mr. A. O. WALKER and Sir MICHAEL FOSTER, all rejoicing that the Farningham scheme has fallen through. Mr. H. CANNELL asks if our office was illuminated on Tuesday night.

THE HALL SCHEME.—We publish the following list provisionally:—

H. J. ELWES, Esq.	...	£1000.
ARTHUR SUTTON, Esq.	...	£1000.
N. SHERWOOD, Esq.	...	£1000.

THE COMMITTEE MEETINGS.

APRIL 23.—The fortnightly meeting of the Committees of this Society on Tuesday last proved once again how very unsatisfactory a place is the Drill Hall for these shows. Few of the exhibitors were able to obtain the space asked for. Many plants were turned away from the hall, and others were huddled away under the stages, or crowded together in a manner that prevented them from being inspected by visitors to the extent that they should be. It is not surprising if such conditions produce a feeling of irritation among those who have been at great trouble to cultivate their plants with a view to exhibiting them at the Society's meetings; and it is increased by the fact that in order to meet the circumstances so far as possible, the exhibits are permitted to encroach upon the space needful for pathways to an extent that produces discomfort by overcrowding, and renders it an impossibility for visitors to move freely from one part of the hall to another. Nurserymen and others who exhibit their plants for the purpose of securing a trade for them suffer, because the Fellows cannot see them under proper conditions, and the visitors themselves are annoyed. Mr. Wright, the genial superintendent, did his best under the circumstances, and no one could do more; but so long as the Society has no other hall than the present one, it would be wise not to invite other societies to hold exhibitions in conjunction with the fortnightly meetings during the busy season, but to hold them on some other day.

On Tuesday the NATIONAL AURICULA AND PRIMULA SOCIETY held its annual show in the Hall, and two of the long central tables were devoted to this purpose. This is hardly fair to exhibitors of the Royal Horticultural Society, when it prevents them from staging their produce. Readers of the *Gardeners' Chronicle* who are unable to attend all the meetings of the Society, and who look to the horticultural Press to give full and accurate reports of them, may imagine that our task is not an easy one on an occasion like last Tuesday; and if any omission or mistakes have been made, it is not surprising. The Auricula Show is reported in another column. The flowers seemed scarcely so good as usual.

The ORCHID, FLORAL, and NARCISSUS COMMITTEES were all very busy, and each of them had novelties upon which to adicate, besides collections.

The FRUIT AND VEGETABLE COMMITTEE had not many exhibits before it, and was concerned rather in discussing the action of the Council in refusing to sanction the award made by the Committee at the previous meeting to the Pear Bergamotte Esperen, as reported in our issue for April 13, on p. 243. In the end, an amicable arrangement was come to in the matter.

At 3 o'clock a SPECIAL GENERAL MEETING of the Society was held to consider a proposal of the Council to purchase land for a new garden in Kent. The meeting was held in the canteen at the Drill Hall, and there was not proper accommodation for more than one-half of the Fellows who attended. The Council were unfortunate in having to submit their proposal upon a day when the need for a Hall was so disagreeably apparent, and the adverse vote recorded was the more crushing and emphatic for this reason. There were nearly fifty new Fellows elected.

Floral Committee.

Present: H. Marshall, Esq., Chairman; and Messrs. C. T. Drury, H. B. May, H. S. Leonard, R. Wilson Ker, J. W. Barr, R. C. Notcutt, W. Bain, J. F. McLeod, John Jennings, Jas. Hudson, W. Howe, C. R. Fielder, Chas. Dixon, Charles Jeffries, E. T. Cook, H. J. Cutbush, H. J. Jones, Chas. E. Shea, E. H. Jenkins, W. P. Thomson, Rev. Canon F. Page Roberts, Harry Turner, George Paul, and Chas. Blick.

Greenhouse Rhododendrons were shown by Mrs. CURRIE, Trinity Cottage, Edinburgh (gr., Mr. A. McMillan), who exhibited a number of cut flowers of a dozen or so unnamed seedling varieties. The parents used were principally R. Veitchianum, R. ciliatum, R. Dalhousianum, and R. fragrantissimum, with a large seedling variety raised by this exhibitor some years ago. He has endeavoured with some success to obtain a sweet-scented flower, with the fringe and other qualities of R. Veitchianum, and in some cases has sought to increase the amount of colour in this section of Rhododendrons, which for the most part are white (Vote of Thanks).

Messrs. B. S. WILLIAMS & SON, Victoria and Paradise Nurseries, Upper Holloway, London, N., had a group of Lilacs in pots, double-flowered Thorns, Viburnums, Boronias, &c. The following Lilacs were very fine, Lamarque, double white; Persica, single pink; Charles N., single, lavender colour; and albo-virginalis, single white (Silver Banksian Medal).

Messrs. J. CARTER & CO., High Holborn, London, exhibited a group of Cinerarias on the floor of the hall, just inside the doorway. It was a very brilliant exhibit, but although many of the plants were returned to the nurseries, owing to there being insufficient space for them in the hall, the arrangement was still somewhat crowded. The strain shown was a good one, possessing large and brilliantly-coloured flowers, the variation in tint leaving nothing to be desired. The "stellata" section of Cineraria was also well represented (Silver Flora Medal).

Messrs. JAMES VEITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea, had a group of Rhododendrons (*Azalea*) mollis sinensis varieties, in pots, and other varieties under the name of R. hybrida fl. pl. All of the plants were dwarf and were arranged upon the stage, where they made a very pretty show. *Hydrangea Hortensia Mariessii*, and *H. Hortensia rosea* were also shown finely. *Azalea amona illuminator* is a desirable variety of the well-known type; and *Azalea Yodogama*, with double flowers of purplish-rose colour, is a Japanese variety of considerable decorative value (Vote of Thanks).

Messrs. J. VEITCH & SONS exhibited plants of *Berberis congestiflora hakeoides*, bearing small dense corymbs of yellow flowers sitting in the axils of the leaves. The latter are alternate, about $\frac{1}{2}$ inch apart on the flowering shoots, and the shoots bear flowers to the tip. This firm showed seven novelties in *Hippeastrums*, viz.:—*Concilla*, showing cerise lines of reticulation on a white ground, the flower of nearly circular shape; *Coriolanus*, similar to the first named, but having red reticulation; *Idothea*, resembling *Concilla*, but with reddish reticulation; *Narga*, bright crimson self; *Milo*, red flakes on a white ground, showy, and medium-sized; *Dorothea*, opaque white with crimson feathering; and *Rinaldo*, a dark crimson self. Besides these, there were plants of *Anthurium Scherzerianum*, *Madame Dalliere*, with spathes of light red colour and yellow spadices.

Messrs. R. & G. CUTBERT, Southgate Nurseries, Middlesex, had a group of Rhododendrons (*Azaleas*) upon the floor of the hall, that compelled admiration for its exceptional quality. At the back of the group were plants 4 feet high, and more than that distance through, of the well-known mollis variety, W. E. Gumbleton, bronzy-yellow colour; *R. indica* var. *Fielder's White*, and the mollis variety *Elizabeth*, a very effective vinous-red, and mollis *Isabella Van Houtte*, a very pale form of W. E. Gumbleton. Some of the Mollis \times sinensis hybrids as standards and dwarfs were splendid specimens, especially such varieties as *Princess of Wales*, *Comte de Papodopoli*, J. F. Seidel, Hugo Koster, Anthony Koster, &c. *Viburnum Opulus*, *Lilacs*, &c., were included in the group (Silver-gilt Banksian Medal).

Mr. H. J. JONES, Ryecroft Nurseries, Hither Green, Lewisham, showed a magnificent exhibit, the centre of which was a gay group of cut flowers of *Narcissus*. *Begonia Gloire de Lorraine*, as fine young plants in 5-inch pots, were full of bloom, and exceedingly effective; *Calla Elliotiana* had very strong, well-developed flowers, and a group of *Tulips* in pots afforded some very bright colour. *Diclytra spectabilis* and a few other plants were also shown from this establishment (Silver Banksian Medal).

The President, Sir TREVOR LAWRENCE, Bart., Burford, Dorset (gr., Mr. Bain), exhibited a very fine group of *Anthuriums*, most of them seedling varieties raised in Sir Trevor's garden. There was an excellent specimen of *A. Scherzerianum burfordiense*, bearing fifteen handsome spathes, and a Cultural Commendation was awarded in respect to this. The group itself was awarded a Silver-gilt Flora Medal.

As Tuesday last was St. George's Day, it would have been surprising had there been no Roses at the Drill Hall. There were collections from Mr. RUMSEY, Joyning's Nurseries, Waltham Cross; Mr. WILL TAYLER, Osborn Nursery, Hampton, Middlesex; and Mr. GEO MOUNT, Canterbury. Mr. Mount had several large boxes containing blooms, and other flowers cut with long stems. Such varieties as *Caroline Testout*, *Bridesmaid*, Mrs. John Laing, and others were magnificent (Silver-gilt Banksian Medal). Mr. Rumsey had nearly a dozen boxes containing flowers, and a large number of varieties were represented (Silver Flora Medal). In Mr. TAYLER's group were *La France*, *Captain Hayward*, *Fisher Holmes*, and other varieties.

Messrs. J. HILL & SON, of Barrowfield Nursery, Lower Edmonton, London, N., made one of their exhibits of Ferns, for which this firm and Mr. MAY, also of Edmonton, have become remarkable. On Tuesday there were little batches of *Adiantum macrophyllum*, the small-growing *A. Legrandii*, *Athyrium Goringianum pictum*, *Lactrea aristata variegata*, *Adiantum scutum roseum*, *A. rhodophyllum*, &c. (Bronze Banksian Medal).

Messrs. H. CANNELL & SONS, Swanley, Kent, again exhibited some fine flowers of choice varieties of zonal *Pelargoniums* (Vote of Thanks).

Mr. H. B. MAY, Dyson's Road Nursery, Upper Edmonton, exhibited a group of plants of a variety of *Pteris albo-lineata*, and named *Alexandre*. It is heavily crested, and the white variegation is more than usual in this Fern. The group was very attractive (Vote of Thanks).

Messrs. PAUL & SON, the Old Nurseries, Cheshunt, exhibited a very bright group of dwarf Roses in pots, and bearing a good display of flowers. The following varieties were most noticeable, and nearly all of them are well known: *H. T. Baldwin*, *Clara Watson*, *Viscountess Folkestone*, *Ellen Keller*, *Liberty*, very bright crimson; *Marquise Litta*, &c. The *Polyantha* varieties, *Perle d'Or*, and *Georges Pernet*, were beautiful (Silver Flora Medal).

Messrs. W. CUTBUSH & SON, Highgate Nurseries, London, N., had a very pretty group of plants that needed more space for its proper display. There were "Ghent" and mollis Rhododendrons, *Lilacs*, *Azalea indica*, *Erica erecta*, *E. hybrida*, *E. Cavendishi*, *E. tenebrosa coccinea minor*, *E. Wilmoreana*, *Magnolia Halleana*, *M. Soulangeana*, *Acacia armata*, *A. cordata*, *Spiraea media*, *Calla Elliotiana*, Standard plants of *Staphylea colchica*, *Lilacs* and double-flowered Thorns, &c. (Silver Banksian Medal).

Messrs. HUGH LOW & CO., Bush Hill Nurseries, Enfield, exhibited a group of Carnations of the *Souvenir de la Malmaison* type. Among the varieties were the following, all of which are good: *Prince of Wales*, *Sir Evelyn Wood*, *Churchwarden*, *Sir Chas. Fremantle*, and *Iolanthe*. Messrs. Low had also a small group of the new *Schizanthus Wisetonensis* exhibited at the Temple Show last year, and figured in the *Gardeners' Chronicle*, June 9, 1900, p. 361. The plants on Tuesday were about 1½ ft. high, and very showy.

Messrs. JNO. LAING & SONS, Forest Hill Nurseries, London, S.E., showed a very large group of flowering plants in pots, and interspersed with decorative species as Japanese *Acers*, *Euonymus*, *Sambucus plumosus aureus*, &c.; *Ghent* and mollis Rhododendrons, *Pyrus Malus Schideckeri*, *Tree Peonies*, *Viburnum Opulus*, *Genista praecox*, and *G. p. alba*, *G. incarnata purpurea* (an effective variety), *Staphylea colchica*, &c. The exhibit would have had greater effect could more space have been afforded the plants (Silver-gilt Banksian Medal).

Messrs. WALLACE & CO., Kilnfield Gardens, Colchester, exhibited hardy plants, among which were the following: *Erythroniums giganteum* and *Hendersoni*, *Triteileia uniflora violacea*, *Anemone fulgens*, also a double-flowered variety, and *A. f. annulata*, having a white band around the centre of the flowers; double white *Arabis*, *Tulipa saxatilis*, *Gerbera Jamesoni*, *Anemone Robinsoniana*, very fine; *Tulipa Lownei*, a new little species of fascinating character; the brilliant *T. Greigi*, *Scilla italica alba*, &c. (Silver Banksian Medal).

Messrs. J. FEED & SONS, Roupell Park Nurseries, West Norwood, had a group of *Lilacs* in pots, for which a Vote of Thanks was accorded.

Mr. ANTHONY WATERER, Knaphill Nurseries, Woking, exhibited blooms of Rhododendrons raised from a cross between *R. hybridum Snowflake* and a variety of *Azalea mollis*. The flowers are white with the faintest flesh tinge, and in shape and size midway between the parents. Each corymb consisted of about twelve flowers. The *Marchioness of Breadalbane*, Taymouth Castle, Kenmore, Perthshire, showed a quantity of the Kenmore strain of *Primula obconica*.

H. J. ELWES, Esq., Colesborne, Cheltenham, showed *Aubrietia Leichtlinii*, an early, robust, and deep purple-coloured variety. Mr. ELWES also showed *Fritillaria latifolia* with purplish-brown flowers; and *Erythronium giganteum Hartwegii* having white flowers.

F. D. GOODMAN, Esq., South Godstone, Surrey (gr., Mr. Moody), showed *Sarmentia repens*, a plant of prostrate, creeping habit, and with bright red flowers of the form of *Erica ampullacea*. It was growing in a pan, and is evidently a pleasing rock plant. The same gentleman showed a hybrid Rhododendron *Auklandii*, with enormous trusses of blush-coloured flowers, changing to white.

From Miss WILLMOTT, V.M.H., came a panful of *Iris Willmottiana* (see p. 261, and fig. 100, p. 271). This lady also showed *Arabis aubrietoides*, with flowers of a pale pink colour.

Some plants of *Primula viscosa*, with flowers of a lilac tint, and having a white eye, came from Mr. JOHN WILSON, Cemetery Nursery, Handsworth, Sheffield.

Sir TRACY S. BARRY, Bart., M.P., St. Leonard's Hill, Windsor (gr., Mr. R. Brown), showed a collection of blooms of *Camellias* cut from plants growing in the open air. Among the varieties were *C. Paeoniflora rubra*, *C. caryophylloides*, *C. imbricata*, and seedlings, as well as some with single flowers.

Messrs. G. JACKMAN & SONS, Woking, in a collection of hardy plants had good specimens of *Primula rosea*, *P. Sieboldi* mauve Beauty, and other varieties of *P. Sieboldi*; *P. auricula marginata*, *P. viscosa nivalis*; *Polyanthus*, *Auricula*, *Muscari botryoides alba*, a fine clump; *Kalmia glauca*, *Gentiana acaulis*, *Dodecatheon splendendum*, *Phlox*, *lilacina*, and a fine pan of *Anemone vernalis* (Silver Banksian Medal).

Mr. AMOS PERRY, Hardy Plant Farm, Winchmore Hill, London, N., had a very pretty exhibit of choice hardy plants all of which were shown in fine condition. *Anemone pulsatilla*, *A. vernalis*, *A. Robinsoni*, *A. flaccida*, with pretty white flowers; *Erythronium revolutum*, *Hendersoni*, and others; *Primula denticulata*, *P. frondosa*; *Androsace carnea*, *Iris stylosa atro-purpurea*; *Tulipa Kaufmanni*, &c. There were also some *Narcissus* flowers and rare *Primroses* (Silver Banksian Medal).

(For Continuation of Report, see p. 272.)

"Faire and fresh as freshest flour in May."—SPENSER.



THE

Gardeners' Chronicle

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A MIDLAND GARDEN.

THIS spring of 1901 is one of the latest that I can remember. In the year 1878 I gathered fully-formed leaves from a Hawthorn hedge on February 23. This year, nothing of the kind could be found on April 10. The first spring day, bright and warm, occurred here on April 17. Walking round the garden on that morning, I began the endless summer work of weeding by grubbing up about a score of vigorous young plants of *Ranunculus repens*, one of the Buttercups, whose long runners will soon smother the flower-beds if not eradicated. What an amount of valuable labour is wasted annually in the destruction of weeds! And what a resolute resistance they make! They are indeed the aborigines, the native races, and fight valiantly for their rights. Civilisation sweeps them aside, but there is no sign yet of their extinction. It would save millions a year if the world were rid of them [or if they could be turned to account. Ed.]. Some time, perhaps, this may be accomplished by a great international effort.

There are weed-laws in some of the American States, enacting heavy penalties for any weed allowed to produce seed. The species of plants which are to be ranked as weeds, depend of course, upon the climate and soil of the district. Every country in the world has its own weed-flora, and in regions colonised by races from a distance strange weeds have often been introduced which have proved greater nuisances than all the natives put together. The Canadian Water-weed has cost England many thousands of pounds; and the Thistle, Dock, Dog-daisy, and Burdock, threaten the United States with an equally noxious invasion.

The walls of this house are covered nearly everywhere with creepers, two-thirds of the mass being Ivy of several varieties. This had been neglected for several years, and I have just had it cut close in, with the result of a terrible mess all over the lawn and walks and flower-beds, for the wind was high and whirled the clippings everywhere. A further result was the clearing out of a score of nests of starlings and sparrows. It is very difficult to see what the sparrow was created for. To civilised man he is a pure and simple nuisance. He eats voraciously all kinds of Corn and seeds, he destroys the early Crocus flowers, he picks out the buds of the Gooseberry-bushes, he stops up the spouts with his nests, he makes the Ivy hideous with straws and feathers, and he cannot sing. Living he is of no use to us whatever, but he has a small value as human food. There is a tasty mouthful of meat on a sparrow's breast, and two dozen of them will make a respectable pie. If we could get them adopted as a recognised food, there might be some chance of clearing the world of them in a generation or two, and the world apparently could do as well without them as without bears and wolves.

The Gooseberry and Currant-bushes are just beginning to show their bloom, accompanied by the little green tufts of unfolding leaves. In another fortnight it will be necessary to begin the daily hunt for the eggs of the Gooseberry-sawfly. They are little white oval things, and are laid in rows on the under side of the Gooseberry-leaves attached to the principal veins. It is easier to destroy these eggs than to pick off the caterpillars which will appear a few days later. I generally find three kinds of caterpillar devouring the Gooseberry-leaves. The sawfly, yellow spotted with black, is by far the most numerous, but there is also a plain yellow one and a green one. The singular fact that many animals simulate the colours of their usual surroundings has led to the theory that these colours are protective. But in the case of these three caterpillars, if the green is protective, why are they not all green? It seems more likely that mimicry is due to the surrounding light vibrations setting up synchronous vibrations among the molecules of bodies whose condition is suitable.

The song birds are beginning their morning concerts. We have the thrush, blackbird, chaffinch, greenfinch, robin, and the hedge-sparrow already joining in the daily welcome to the sun. It is delightful to listen to these little songsters, and to distinguish the voices of old friends, but if one catches an unfamiliar note and the bird itself is not visible, how is it to be identified? Most books on British birds give descriptions of everything that an ornithologist wants to know, but the things which people who are not ornithologists want to know are generally omitted. The public want to be able to determine the species by

such characters of form and action as can be seen at a distance of 50 feet, and they want a description of the song in some comprehensible language.

Attempts to render it in syllables, or in musical notation, are never satisfactory. The notes are too high, and the intervals too irregular for our ordinary scales. If some good observer, who is also a good writer, would turn his attention to this, and give us a book enabling us to do what we want, it would be a very popular volume.

I have just been pruning the Hybrid Perpetual Roses, and have been much scarified by the very objectionable thorns. Has any "improver" of Roses tried to get rid of the thorns? No doubt they have a use to the wild Briar, helping it to clamber over hedge and copse, but in cultivation they are a nuisance. Is it correct to spell the word Briar or Briar? The dictionaries mostly give it Briar. Webster says Briar is the Irish form; nevertheless, it is frequently used in England. Ten years ago I went to see Burne-Jones's series of pictures called "The Briar Rose," and took the trouble to study it. The conclusion I came to was that while the drawing was accurate and the colouring rich and harmonious, the general form was fragmentary, confused, and not beautiful, and the subject not worthy of the labour bestowed upon it.

As Science is the revealer of the profoundest truth, Art should be the revealer of the loftiest ideas and emotions. The great artist is he who can give to those who look upon his pictures nobler conceptions of man and Nature than they had before, and make them feel braver, kindlier, more earnest and more helpful. The Briar Rose picture has no such influence.

To those who delight in the perpetually-changing beauty of a garden, there is no time so charming as the early hours of a summer morning—an hour or two after sunrise. The sparkle of the dewy grass, the delicate odours that arise from leaf and flower, the varied bird-songs all around, and the tenderness of the early sunlight, stir the soul with a delicious happiness only known to the early riser. Yet not always even to him; there are periods when the mind is full of worry and distraction, when a man may walk among the loveliest scenery, and yet be utterly unimpressed. He who is not aware of the power to be obtained by the conscious exercise of "attention," may spend his years among hills and woods and waterfalls, and never know that they are beautiful. He may live among the noblest friends, and never perceive how lovely human character may be. But if by any means the desire comes to him to seek for beauty, if he looks around him with attention concentrated on that thought, what an awakening of the soul he will experience! The beauty to be found in every tree and flower, in stones and grass, and hedgerows and rippling brooks, is so inexhaustible and so entrancing, that he who has not yet discovered it does not half understand the value of life. There is no surer solace in trouble, no more helpful medicine for a saddened heart than the search for beauty by the light of attention.

I was foolish enough to plant half a dozen evergreens in the middle of December. The ground was cold, and there was not a week of genial weather for four months after. The natural consequence is that three are dead, and the other three have suffered considerably. Evergreens are subject at all seasons to more or less evaporation of moisture from the leaves.

If this cannot be supplied by the roots, the plant dies. In transplanting, a large number of the delicate root-hairs by which moisture is taken in are destroyed, and the point to be considered is, how to get new ones to grow in time to save the plant. Transplant, therefore, when the soil is warm and the air moist. These conditions are most often found in the early autumn and late spring. Englishmen who have not travelled far, looking upon the wintry woods and hedges of this island, would hardly

southern half of the south temperate zone, but that nearly the whole of that region is covered by the ocean.

The pretty shrub which used to be known as *Andromeda floribunda*, is now in bloom (April 20). Its clusters of pearly-white heath-like flowers are very dainty and charming, and the foliage is rather handsome. It is evergreen and very hardy, and is altogether a very desirable shrub. I have had some difficulty in hunting it out in *Nicholson's Dictionary of Gardening*

quite out of date. The other day I asked a young man in a seed shop for some bast for tying up plants to their supports. He actually did not know what I meant. He had never heard of bast; what they sold for tying up was raffia. This was a name quite new to me, but I find it is a material rather tougher and better than bast, obtained from a Madagascar Palm. Bast is the inner bark of the Lime-tree. The well known Russian mats are made of it, and when I was young we



FIG. 101.—

NARCISSUS VAR. ROBERT BERKELEY.

Trumpet very pale lemon; perianth white.

(Exhibited at the Royal Horticultural Society's Meeting on April 23, 1901, when it was awarded a First-class Certificate. See p. 272 in our last issue.)

NARCISSUS CHARLES WOLLEY DOD.

Trumpet yellow; perianth very pale yellow.

(Exhibited on the same occasion. A very large, fine, bold flower.)
Certificated on April 24, 1900.

believe that the majority of trees and shrubs throughout the world are evergreen. Deciduous trees and shrubs are chiefly confined to the narrow strip of the earth's surface between the parallels of 40° and 60° in the northern hemisphere. All the rest of the world except the arctic regions is occupied chiefly by evergreens, whose species outnumber the deciduous forms by three to one. The chief cause of the fall of leaves in autumn seems to be the wide difference in temperature between summer and winter in the northern half of the north temperate zone. It would be the same in the

the old genus *Andromeda* being now cut up into eight distinct genera. I found it at last under the genus *Pieris*. To an old botanist accustomed to the names used by the last generation, this new system of nomenclature is puzzling, and sometimes irritating, but one must recognize that to return to the oldest known name is perhaps the most effectual method of eradicating synonyms, and the rising generation will have all the benefit of that useful work. Changes, which are no doubt mostly improvements, go on in all departments of life. I find that some of my gardening ways, learnt fifty years ago, are

used to pull to pieces damaged mats to get strips for tying up. The old-fashioned strips of cloth for nailing up wall trees and creepers are being superseded also by small metal staples of various sizes, which seem to answer very well. The long-handled pruner and fruit-gatherer which are now in general use are modern and very useful inventions; and what should we do now without the lawn-mower? Yet I very well remember its introduction, and before that we had nothing but the scythe. F. T. Mott, F.R.G.S., Birstall Hill, near Leicester.

NEW OR NOTEWORTHY PLANTS.

LÆLIA JONGHEANA "ALETHEA."

A CHARMING and delicately-tinted novelty, nearly an albino, and not a whit inferior to one in point of beauty, and probably in the long-run in point of rarity also. The sepals and petals are of silvery-white, with a tinge of very pale rose-pink colour following the veining except upon the inner halves of the lateral sepals, which are untinged. The ample lip has a crimped edge, and is white, the base and crest of raised lines being of a lighter yellow tint than is usual in this species. The column is also white. It bloomed with that excellent plant cultivator, Joseph Broome, Esq., Sunny Hill, Llandudno, who wishes it to bear the Christian name of his wife—Alethea.

A splendid flower of a brightly-coloured rose-purple tinted flower, measuring 7 inches across, is also sent with the novelty. *James O'Brien*.



FIG. 102.—ODONTOGLOSSUM RUCKERIANUM
"MRS. R. BROOMAN WHITE."

(Cream-coloured, tinged with rose; the sepals and petals spotted with dark red. Exhibited by the raiser, R. Brooman White, Esq., Garelockhead, N.B., at the Meeting of the Royal Horticultural Society on April 9, 1901, when it received an Award of Merit.

DENDROBIUM × LOTUS = D. NOBILE ♀
× D. SUAVISSIMUM.

A distinct new hybrid, raised and flowered by Norman C. Cookson, Esq., Oakwood, Wylam, Northumberland (gr., Mr. Wm. Murray), and which is a worthy acquisition, especially for the brightness of the cowslip-yellow colour of its flowers. In general appearance the pseudo-bulbs resemble those of a short, thick *D. nobile*, much swollen on the upper part, which bear three leaves at the top, in the manner of *D. suavisimum*. The flowers on the plant that flowered for the first time come in pairs, but the long stalk of the inflorescence seems to indicate that several flowers, forming a short raceme, may be expected when the plant is stronger. The flowers equal those of an ordinary *D. nobile* in size and shape, except that the downy lip is displayed more as in *D. suavisimum*, especially in the short, convolute claw folded over the bright green column. The flowers are bright cowslip, yellow, with a striated purple disc in the centre of the lip. *J. O'B.*

ALPINE GARDEN.

A FEW SAXIFRAGAS AND OTHER EARLY-FLOWERING HARDY PLANTS AT KEW.

IN the midst of cold and uncongenial weather, it was most pleasant to note among the small-growing hardy plants which succeed so admirably in the rockery in Kew Gardens, such bright colours as *Saxifraga oppositifolia*, and its varieties *rubra* and *alba*; the two pretty yellow *S. sancta* and *apiculata*, as well as *S. Burseriana*, *Salomoni*, *ligulata*, and others. The several varieties of *Anemone Hepatica* were also very attractive, and so were the lovely *Narcissus cyclamineus*, and *N. minor* and *N. minimus* with their small miniature flowers. Among the rarer plants we also noted: *Daphne Blagayana*, *Erythronium Hendersoni*, *Androsace Lageri*, *Synthlipsis reniformis*, *Primula denticulata* and *P. d. alba*, *P. marginata coerulea*, and the remarkable and very interesting *Shortia galacifolia*. All

of both parents. The hybrid has none of the acutely rigid spines of *S. Burseriana*, which it most nearly resembles, and has in place thereof, a more spreading glaucous tuft of slightly downy awl-shaped leaves. It is most free in flowering and in growth. *E. Jenkins, Hampton Hill.*

ORCHID NOTES AND GLEANINGS.

EPI-LÆLIA × RADICO-PURPURATA.

LIKE all the hybrids of *Epidendrum radicans*, this cross with *Lælia purpurata* is acceptable on account of its brilliant colour, and the profusion with which it bears its elegantly-arranged flowers; although in point of size it is scarcely what would be expected from a cross in which such a large flower as *Lælia purpurata* was one parent, the flowers of *E.-L. × radico-purpurata* being only 2 inches across at the widest. It was first flowered by Messrs. Jas. Veitch & Sons, Ltd., Chelsea, in 1897; and since that time in quantity by Messrs. Charlesworth & Co., Heaton, Bradford, who now send several examples, varying in depth of colour from reddish-orange to bright copper-red. The form of the flowers with their curiously curved column adheres closely to those of *E. radicans*, and they are produced in terminal heads of five or six. One variety has a chrome-yellow base to the lip.

ODONTOGLOSSUM CRISPUM "BEAUTY."

This well-deserved distinguishing name is borne by a fine form of typical *O. crispum*, now flowering for the first time with Capt. G. W. Law-Schofield, New-Hall-Hey, Rawtenstall, Manchester (gr., Mr. Shill). It is what a florist would call a perfect flower, all the segments being broad, and well filling in the area of its circumference. It is $3\frac{1}{2}$ inches across, the sepals an inch wide, slightly fringed, white, showing a slight tinge of purple through from the colouring at the back. The petals are $1\frac{1}{2}$ inch wide, and heavily fringed, pure white. Lip ovate, crimped, and fringed, white with a yellow crest, and several light brown blotches. It combines all the good qualities of form and substance which is now considered essential in an unspotted crispum, before it can be regarded as valuable.

MINIATURE TULIPS.

SEVERAL rare and interesting miniature Tulips from Asia Minor have recently flowered in Messrs. Wallace & Co.'s collection at Colchester, the following being most distinct and noteworthy among them:—

Tulipa Korolkowi var. *bicolor*.—A new variety of an old but rare Tulip, producing a slender stem 6 inches high, three glaucous leaves 4 to 6 inches long, the upper linear, the lower lanceolate and longest. The flower is orange-yellow, cone-shaped, $1\frac{1}{2}$ inch across, heavily blotched with glowing vermilion at the base of each segment, a similar colour showing on the outside of the flower also. The filaments are coloured black or brown, and are half the length of the stamens. The flowers are very brightly coloured, most resembling Tulip "Keizer's Kroon" in miniature. It is a charming little plant for the rockery, flowering naturally in the last week of April. Grown in a pot or pan in a cold frame, it will flower in the latter half of March. This and typical *Tulipa Korolkowi* are the smallest Tulips known to me. *T. Korolkowi* var. *bicolor* received an Award of Merit when shown at the Drill Hall on March 26 by the Messrs. Wallace.

Tulipa triphylla is a dwarf Tulip, of different type to the foregoing. It produces a stem 5 inches high, three leaves 6 inches in length, and one orange-yellow flower 3 inches across. The perianth segments are broadly spatulate, narrowest at the base, and average half an inch in width, the inner segments being much broader than the outer. The flower has the remarkable habit (for a Tulipa), of remaining fully expanded all night in the open ground. The plants are most suitable for cultiva-

the above-named plants, and many more of their congeners, require so little attention when once planted in their permanent quarters that they should be general favourites wherever early spring flowers are in requisition. *G. S.*

SAXIFRAGA SALOMONI ×.

Nearly a year ago I sent a short note to the *Gardeners' Chronicle*, upon what I regarded a most promising hybrid *Saxifrage*. I think, then, my only plant had but three spikes of bloom, but this year it has produced a dozen spikes. This pretty hybrid is a cross between *S. Burseriana* and *S. Rocheliana*, and possesses the characteristics of both. In flowering, the hybrid quickly follows after *Burser's* kind, so much so that I was inclined to regard *S. Boydii alba* as one parent, and the flowers of the hybrid are a little like in form to those of the plant last-named. The hooded flowers are produced usually in threes, on stalks 2½ or 3 inches high, the petiole as the buds reddish-scarlet, slightly viscid, pubescent. The scarlet colour of the stems is a feature in the plant. The tufted habit is distinct from that

ion on a rockery, where they would be most effective when planted beneath a carpet of mossy Saxifrage, or similar low-growing herb. Several colour forms occur in imported batches, mostly shades of yellow. The plant flowers in mid-April in the open border, and a month earlier if given the protection of a cold frame.

Tulipa Lownei is a delicately-coloured little species having some resemblance to *T. Kaufmanniana* in the form and coloration of its flowers. It produces two small leaves of equal dimensions margined with red. One, two, and occasionally three flowers are thrown up from each bulb; coloured rosy-white above, rich yellow below. The inner segments are narrowly keeled with green on the outside; the outer segments are almost entirely flushed with rose and brown on the outside—rose predominating in sunny weather. Each flower measures only 2 inches across, and rarely exceeds 5 inches in height of stem. They are very fragrant; expanding fully during bright sunshine only. A light warm soil is best for these Tulips, as the bulbs, which are of the *T. persica* type, require to be well ripened-off when growth is finished. It is best to entirely surround the bulbs with sharp sand to protect them from slugs and other pests when planting. *Geo. B. Mallett.*

SPRAYING APPLE AND PEAR TREES.

VARIOUS INSECT PESTS—THEIR HABITS—REMEDIES—
POISONOUS SPRAYS.

SPRAYING, as a means for combating the various insect pests which attack and work such a vast amount of mischief among garden and orchard trees, has now come to be looked upon as a matter of dire necessity, if the crops are to be saved from their ravages. I am, of course, quite aware that spraying has not yet by any means become universal in this country, yet it is a matter for congratulation to know that it is now adopted by most leading cultivators, especially those who grow exclusively for market.

As the time is at hand when Apples and Pears should receive their first spraying, a few notes on the subject will not, perhaps, be out of place. Those who have made a study of the subject know full well the various kinds of insects and their larvæ that have to be contended with; but those unacquainted, or but imperfectly so, with them may be glad of a list of the most destructive of these foes, with a brief account of their methods of attack.

The first to be named, as it is the most destructive, is the larva, or caterpillar, of the Winter Moth (*Cheimatobia brumata*). The eggs laid by the female of this species of moth will be hatching out in the course of a few weeks, and this generally takes place when the leaves are unfolding on the trees. The larvæ at once start feeding, and devour all leaves, shoots, blossoms, and fruits within their reach. As each female lays a great number of eggs, it will be seen that but a few of them are required to lay the foundation for a bad attack.

The figure-of-eight moth is the next to be mentioned. The female in this case lays her eggs singly instead of in clusters, on rings on the branches and stems, and the larvæ, when hatched, begin feeding in the same destructive manner as the preceding. Then there are the Lackey Moth (*Bombyx neustria*), small Ermine Moth (*Hyponomeuta padella*), Vapourer Moth (*Orgyia antiqua*), and the Mottled Umber Moth (*Hybernia defoliaria*), whose larvæ prey upon the foliage of both Apple and Pear-trees. Then we have several other pests which devote their attention to the destruction of blossoms and fruits.

Of these, the Codlin Moth (*Carpocapsa pomonella*), Apple-blossom Weevil (*Anthonomus pomorum*), Apple Sawfly (*Hoplocampa testudinea*), and Pear Sawfly (*Selandria atra*), are the principal depredators, and are more in evidence in some seasons than in others. The Codlin Moth is a well-

known pest, and is chiefly accountable for the large numbers of quarter and half-grown fruits that are often to be seen lying on the ground under the trees. The female moth lays her eggs in the calyx of the flower, and the resulting grub then eats its way down to the core of the fruit, and feeds on the interior. The infested fruits generally drop to the ground about the time the grubs are full grown, and they should always be gathered and burnt. If allowed to remain the grubs crawl out, they gain the stem and ascend it, and then spin a cocoon in some crevice of the bark, where they hibernate until the following spring. The larvæ of the Saw-flies are as destructive as that of the Codlin Moth, and attack in a similar manner, so I will pass on to the Apple-blossom Weevil. In this case the method of attack is somewhat singular, as the female insect punctures the side of the expanding bloom-buds, so that she can deposit her eggs in the interior. The grub, when hatched out, eats away the fructifying organs of the flowers, and such infested buds never expand. Anyone taking the trouble to examine any of the buds that appear to be lagging behind the others, will find what I have stated to be the case, and verify the matter for themselves.

This is a difficult pest to deal with now, and the only remedy is to resort to hand-picking, and to shake the full-grown weevils into cloths spread beneath the trees. A couple of women or boys can look over a good number of dwarf or bush trees in a day, but, of course, this is impracticable where the trees are of any height. These insects should specially be dealt with in the winter months, or while the trees are dormant.

One other pest I have omitted, as up to the present time no real remedy has yet been found for its destruction, and that is the Pear Midge (*Diplosis pyrivora*). The eggs of this insect are laid, in this case, just before the blossoms expand, the petal being punctured for the purpose with the ovipositor in precisely the same manner as does the female Apple-blossom weevil. The grubs, when hatched out, eat their way down to the core, and as they become full-fed, the fruits assume a swollen and distorted appearance, and crack open if left alone, and eventually drop from the tree. As infested fruits can be discovered at a glance by their unusual size and "gouty" appearance, the numbers of this insect can be considerably lessened by picking off and promptly burning all that are found. This insect has committed great ravages during the past few years, and anyone who can discover an effectual remedy will deserve the best thanks of all fruit-growers.

Next we come to remedies: for those insects whose larvæ prey upon the foliage, shoots, and young fruits, the best method of destroying them is to poison their food. For orchards this is best accomplished with Paris Green mixture, but as it is a violent poison, I do not advise its use in gardens. Paris Green should be used at the rate of 2 ozs. to 20 gallons of water, with which a little soft-soap has been mixed. This should be applied with a knapsack or other form of spraying-pump, and for tall trees lengths of brass or iron-tubing is needed, so that the top branches can be properly reached. Great care must be exercised in its use, and after the spraying is finished, thoroughly wash everything that has been employed in connection with it. It should be stated that Paris Green does not dissolve, although a powder, and is only held in suspension, therefore it is necessary to frequently stir and keep it in motion, to ensure its being applied at an equal strength.

For garden trees I can confidently recommend an insecticide named Kilnright. This I have used extensively, and am therefore in a position to speak of its merits. Two ozs. of this is all that is needed for each gallon of water required, and if the latter is used hot, the insecticide is rendered all the more effective. This, too, for the sake of economy should be applied with a spraying-pump, and will answer for all the pests enumerated, except when otherwise stated. The spraying should be done

just before the trees come into blossom, and immediately after the fruit has set, thoroughly wetting every portion of the trees on each occasion. After this, one, or at the most two other sprayings will suffice.

In conclusion, it may be added that the attacks of many of the above-named insects may be greatly lessened, and in some cases they may be partly or wholly exterminated by the adoption of proper remedial measures during the winter months, which matter will in due season form the subject for another paper. *A. Ward.*

FREESIAS.

THESE bulbous plants are so easily grown, so fragrant, and pretty, that a place should be found for them in every garden. Failure to get *Freesias* to produce their flowers with freedom is usually due to mistakes as to their requirements. I find that the cooler the temperature in which they are grown, the better the results; for not only do they keep sturdier, and show their flowers off to better advantage, but they last much longer. In some gardens I have seen them grown along steadily, and then placed in heat, to cause the flowers to expand. This is a mistake, as I have found that flowers produced in this manner certainly come out quickly, but they do not last any length of time. A batch of *Freesias* may be required for a special occasion, and if the plants are kept cool, they will not open in time; then, in such cases, warm treatment must be afforded, but only until the flowers begin to expand. The best method is to pot the bulbs in batches, putting ten good ones in a 48-pot, and place near the glass in a cold frame, and keep close until growth has begun. The soil should consist of good turfy loam, pulled to pieces by hand, and mixed with some spent Mushroom bed manure rubbed through a sieve, leaf-mould, and some sand, and this should be moderately moist at the time of potting the bulbs, then only a slight syringing will be necessary till growth begins. Some gardeners mix a small quantity of artificial manure with the soil; but it is better not to do so, but to apply manure when the pots get filled with roots. Grow the plants in a cool place, keeping them near the glass. Neat sticks should be afforded to the number of four round the rims of the pots, and thin twisted strands of raffia run round these. Another mistake is sometimes made by withholding water as soon as the flowers are over, but instead of drying them off at that time all at once, water should be afforded for a time, so as to allow the bulbs to mature slowly, and then be gradually dried off. Only the other day an instance came under my notice where some pots of *Freesias* that had just ceased to flower were put on one side to dry off at once. *W. P.*

HOLMEWOOD, CHESHUNT.

THE garden of John T. Bennett-Poë, Esq. (gr. Mr. Downes), although not of large extent, contains a very varied collection of interesting plants, under glass and in the open air. The place is an old one, and not laid out with much attempt at scenic effect; the aim seems to have been to place the plants in suitable positions than to consider general effect.

As in most gardens, the protracted cold weather has made the present a backward season, and the flowers in the open air are yielded chiefly by the patches of different kinds of *Narcissus* in the little orchard and the beds. In the shelter of the house is a large sunk tank for the hybrid and other *Nymphaeas*; in the beds in front of the glass-houses a good display of Tulips and other bulbs was remarked, the sheltered bed at the back of one of the glasshouses having a number of species of Tulipa, a patch of *T. Greigii* having showy, purple spotted foliage, and a good show of flower-buds. In front of one of the beds were noticed clumps of *Paschkinia scilloides*, covered with flowers; *Scilla italica alba*, a tiny species with a profusion of white

flowers. At the corner of one house is a patch of *Opuntia*, which has stood outdoors for several years; a border fronting another is crowded with dense masses of *Crinum Powellii*, which have not been disturbed for years, and which annually give a fine show of handsome blooms.

THE ORCHIDS

occupy a large amount of space in the plant-houses, but no house is given up entirely to them, for in each are numbers of pretty, rare, and curious subjects, the conditions being suited to them. In one of the warm-houses in which were found

splendid plants of *Saintpaulia ionantha*, the largest of which were about 1½ ft. across, and bore a large number of flowers. The plants were more beautiful than those in pots.

In the next house a number of *Sobralias*, including *S. macrantha alba* and *S. xantholeuca*, occupy the end; *Masdevallia Chimera*, *M. bella*, and others in bloom, were growing in baskets. Here too are some fine plants of *Cymbidium eburneum*, some of them in bloom, though not so profusely as last year. A plant of *Cymbidium Monroianum*, King and Pantling, figured in *Orchids of the Sikkim Himalayas*, t. 249, with

bulbs, and in the matter of bloom the latter bulbous section have the advantage, very beautiful being the plants of *Freesia aurea*, well furnished with bright yellow flowers; the rose-crimson *Anomatheca cruenta*, &c. Some plants of *Pinguicula caudata* were showy with their rose-coloured flowers, and plants of *Utricularia montana* were about to open their white and yellow flowers. In this house a batch of *Lælia harpophylla*, bearing a profusion of flowers, was observed. These plants are grown cool, and were exhibited at the Royal Horticultural Society last year, to demonstrate the good effect cool treatment has upon the plant.



FIG. 103.—TRELLISED WAY IN THE BOTANIC GARDEN, MALTA. (SEE P. 286.)

Anthuriums with scarlet spathes, and some well-cultivated *Nepenthes Mastersiana*, *N. Hookeriana*, and others; in bloom were noted two varieties of *Dendrobium atro-violaceum*, the one an exceptionally fine form; a tuft of the pretty white *Polystachya Ottoniana*, *Phaius* × *Norman aureus*, a charming, pale yellow flower, slightly tinged with rose; a number of profusely-flowered *Dendrobium nobile*, and other pretty species. In this house was noted a plant of *Lælia anceps*, whose flowers had been crossed with *Lælia tenebrosa*; it was carrying two seed-vessels. Plants of *Costus igneus* were observed, which have been carrying many flower-heads, and growing out of the thin layer of shell-gravel on the stages among the plants were

upright spike of cream coloured flowers, marked with pale purple, was in bloom. The flowers resemble in shape those of *C. sinense*, and like it they are fragrant. A few of a number of *Cypripediums*, including two of *C. insigne* *Sanderæ*, were in bloom; as also a plant of *Cattleya Schroderæ*. Among other little known plants were the showy scarlet-flowered *Scutellaria Ventenati*; and the handsome white-flowered *Acidanthera candida* had just gone out of flower. The corms of this plant had been sent from Mombasa. Grown in shallow pans suspended from the roof were good specimens of the *Pleione* section of *Celoglyne*, which thrive and flower very freely here.

The next house, a cool one, contains Orchids and

Overhead were plants of *Cattleya citrina* in fine flower, the species having been grown here successfully for many years. A peculiar feature of the treatment is, that after flowering, and in hot weather, they are taken down from their position near the glass, and suspended from the edges of the stages at the side of the walk, there to remain till summer has passed. Plants of *Ada aurantiaca* have been good; they were about to go out of bloom. *Dendrobium Falconeri*, in strong and healthy examples, bore numerous large flowers; *Odontoglossum ramosissimum* had a fine branched spike; a plant of *Oncidium macranthum* was about to bloom grandly; *Odontoglossum Rossii majus*, *O. Cervantesii*, and *Sophronis grandiflora*, together

with some *Odontoglossum crispum* and *O. Pescatorei*, would help the display. Three fine varieties of *Cymbidium Lowianum* were in bloom, the best variety having white side-lobes to the lip, with a reddish front-lobe. *Cymbidium madidum* was carrying three flower-spikes. At the end of this house some fine *Clivias* were in flower.

Of the bulbous plants, *Zephyranthes Treatiae*, from Florida, and the small-growing *Cyrtanthus parviflorus*, from the Cape, were in flower. Fine plants of *Disa grandiflora* in great vigour were observed in a small house, and other *Disas* were doing well. Another is filled with *Auriculas* in bloom, together with other plants. A batch of *Nerines* in splendid condition, a collection of *Phyllocacti* about to bloom well, were remarked, and in another house *Arctotis aspera*, with a fine head of orange-coloured flowers; and *Gerbera Jamesoni*, with large cinnabar-scarlet blooms, were noticed.

TREES AND SHRUBS.

CEDRELA SINENSIS,

as a town tree, is said to have all the advantages of the *Ailanthus*, and none of its defects. The *Florists' Exchange* of March 16 (New York) gives a figure of a handsome symmetrical tree of this species. It is known in some gardens under the name of *Ailanthus flavescens*.

CHOISYA TERNATA.

I recently came across a fine example of this Mexican shrub in the gardens of Holme Park, near Reading. It had been planted against a wall, but so great has been the growth of the plant that no attempt was made to keep it closely trained; and at the present time it is fully 9 feet high, and extends nearly 3½ feet from the face of the wall, possessing a breadth of 10 feet. Many vigorous shoots issue from the base, and the foliage is glossy and fresh looking, with clusters of flower-buds terminating every shoot. The garden at this part stands high, and the walls afford the plant protection from north and east. No other protection is afforded, and the perfect condition of the older foliage shows none is necessary. *E. J.*

THE WEEK'S WORK.

THE FLOWER GARDEN.

By T. H. SLADE, Gardener to Lord POLTMORE, Poltmore Park, Exeter.

Bedding Plants.—Make a careful inspection of the stock, and see if there has been sufficient raised of all kinds. Prepare a plan of the bedding design. Although in a measure the same style of bedding may be necessary as in previous seasons, it is desirable to make a little change if possible. It is good practice to introduce one or two new features in the arrangement every season, and if satisfactory to the proprietor, they can be increased. In some places a low or dwarf style of bedding will be best, but if the ground is flat, tall "dot" plants should be freely used. Try to do the planting in a manner most suitable to the immediate surroundings. Some colours will be more suitable than others, or they may be more agreeable to the owners. Taste in respect to colours varies greatly, but in any case it should certainly be seen that the colours used blend with each other, or form pleasing contrasts.

Hardening-off.—All plants that are established should be transferred to cold frames. *Pelargoniums*, which may have been potted late, may require to be kept in a little warmth for a short period. Any plants that are removed from warm houses to cool frames will need care for the first few days. Any necessary watering should be done in the early part of the day. Except in favoured localities, the end of May is early enough to commence planting-out.

Cannas intended for bedding should be placed outside in a sheltered corner, where they can be protected at night for the present. Keep them well supplied with water, and afford manure occasionally. If the plants are strong and sturdy when they are put out, they will flower early.

Dahlias.—Pot on these if required, and place them in frames for the present. Dig and manure the stations for them in the garden, and prepare the necessary stakes.

Miscellaneous Plants.—Pinch and regulate the growths of *Plumbagos*, *Fuchsias*, *Abutilons*, &c., intended for bedding-out, and for the present remove all the flowers as they show. *Fuchsias* are very liable to be injured when first put out if the foliage is soft and tender. Encourage hard sturdy growth by affording them plenty of fresh air and exposure to light and sun.

Box edgings may now be clipped. It is sometimes necessary to trim them again at the end of the season, but this will depend on the amount of growth made; 6 inches is quite high enough for an edging of Box.

Lily of the Valley.—Just before growth commences is a good time for making new beds, and a few should be made each year. The land should be dug deeply, and made fairly rich. Plant roots with several crowns. Draw a wide drill, and lay the roots in the drills, covering the crowns not too deeply. The drills should be 15 inches apart. Mulch the beds with a little spent manure from a Mushroom-bed. Make plantations in several aspects, to obtain a succession of bloom. Put last year's crowns—the smallest—in a bed by themselves; they will flower when three years old—not sooner.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. I. MEASURES, Esq., Cambridge Lodge, Flodden Road, Camberwell.

The Flowering of the Plants.—Brighter weather has prevailed during the past fortnight, in place of the cold, sunless, and unseasonable conditions which have retarded most of the plants, and promised at one time to upset the calculations of the orchidist who required flowers at a particular date. The *Cattleya*-house for several weeks will offer many attractions. *Cattleya Lawrenceana* has not been imported for some years, and it is becoming scarce, but where the species is to be found in quantity, and well grown, there are few others that afford a finer display. *C. Lawrenceana* requires more light and slightly warmer conditions than *C. labiata*, and as soon after flowering as new roots form, any repotting that may be necessary should receive attention. *Cattleya* × *William Murray*, *C. × Lawre-Mossiae*, *Lælio-Cattleya* × *Hyeana*, and others having *C. Lawrenceana* as one of the parents, have the flowers pushing up in the sheaths; and I find that the flowers expand better, and there is a greater depth of colour in them, if at this time the plants are hung near the glass, or, failing that, they are placed in a light position, care being taken to remove them to a shaded house, or part of a house, as soon as the flowers expand, otherwise the colours quickly fade. *C. Mendeli*, *C. Mossiae*, *Lælia purpurata*, and the numerous hybrids that flower in the summer should be afforded encouragement so as to enable the advancing flowers to develop properly. The cold, sunless weather has been detrimental to these plants, upon which reliance is generally placed for making the summer display, and they will need much care if they are to open their flowers at the usual time. If wanted to bloom about the middle of next month, I would advise that the plants be removed where practicable to a house a little warmer than the *Cattleya*-house proper.

Odontoglossum houses.—*Odontoglossums* form the chief attraction at the present time, and there can be no doubt that *O. crispum*, when well grown, has no superior. I recently visited Mr. T. Rochford's establishment at Broxbourne, where about 100,000 *Odontoglossums* are cultivated, about one tenth of these being in "spike" or in flower, making a magnificent display, and showing that under suitable conditions in this country the plant will bear comparison with the best continental growers can produce. I noted in particular the absence of leaves with decaying tips, which some gardeners find to injure the plants greatly. The general good condition of the stock of plants is attributed by Mr. Rochford to the practice of repotting the plants when they are commencing to make roots, and to the looseness of the compost used, viz., two parts sphagnum-moss to one of peat, which is made moderately firm. The roots of the Ferns found in the peat made use of is largely used in the place of crocks, or they are mixed with them. I, in common with other writers of Orchid calendars who have advocated this method of potting, was naturally rejoiced to witness the success achieved by Mr. Rochford.

Oncidium concolor is a charming inmate of the cool-house, and its failure under cultivation seems to be due to exhaustion brought about by profuse flowering during the first two years after being imported. The evil may be averted by the removal of the flower-spikes from the plants immediately the whole of the blossoms have opened. When this is done, place the plants in a cool moist house, or a part of a house that is cool and moist, and shade them from bright sunshine.

Plants of Miltonia vexillaria with advanced flower-spikes should be kept under observation, the points of the flower-spikes being very liable to become jammed between the leaves, and as they grow very quickly they are apt to snap asunder if not released early. Fumigate occasionally to prevent thrips attacking the flower-buds whilst the latter are small.

THE HARDY FRUIT GARDEN.

By C. HERRIN.

Disbudding.—The disbudding or removal of surplus growths of fruit-trees should not be confined to the Apricot, Peach, and Nectarine, but is applicable also to all other kinds of fruit-trees, perhaps to a lesser extent, but where judiciously carried out, not only are wall fruit-trees benefited by the practice, but even bush or pyramid Apples, &c., may have their shoots so regulated and controlled as to do away with the necessity of knife-pruning to a large extent [so said the elder Rivers fifty years ago. Ed.]. Plums on walls usually start into growth soon after the Peach, and the removal of surplus buds in this instance requires much the same kind of manipulation. Were the shoots which push from the young growths annually allowed to extend, the tree in one year would become a thicket, which could not be laid-in for lack of space. In disbudding the Plum, a few growths may be allowed to extend at conveniently-placed positions, especially on older trees, to be eventually pinched to two or three leaves, and thus form fruiting spurs, and spurs on the Plum are very fruitful, and should be encouraged. Cherries also require similar disbudding to the Peach, but in reducing the shoots of the Morello, the disbudding must not be quite so severely carried out, and the shoots may be more thickly laid-in than is advisable for the Peach. With the dessert Cherries spur growths should be encouraged, and some shoots allowed to grow to be pinched in for that very purpose. Where any of the leading shoots of Pear-trees have formed terminal blossom-buds, they should be rubbed off, and growth encouraged from the next nearest wood-bud on the shoot.

Cleansing the trees.—Where fruit-trees on walls were sprayed with the soda and potash mixture advised early in the year while top growth was dormant, the spread of insect pests, and especially green-fly, will not cause much trouble before the blossoms have set. Should aphides make their appearance, apply tobacco-powder immediately, and when the bloom is set let the trees be thoroughly syringed with an insecticide. The trade *Quassia* extract is an efficient and safe agent for the destruction of aphides on fruit-trees, and being put up in a concentrated form, it may be kept ready for use simply by adding the required amount of clear water according to the directions that accompany the bottles. Washing the trees occasionally in dry weather with clear water will help considerably to keep insect pests under, especially in dry and warm weather. The change to summer-like weather has caused fruit-trees to burst rapidly into bloom, and at the time of writing, standard Cherries, Pears, and Plums are fast becoming masses of blossoms. The chances are that the weather will become cold, with frosts at night, and temporary covering materials should still be kept in readiness for use when required.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HUSSEY PACE, Esq., Prestwold Hall, Loughborough.

Fuchsias.—Let some robust plants be selected from amongst those which were struck in the autumn, for the purpose of forming standards, and put them in a house having a night temperature of 55° to 60°, and syringe them morning and afternoon. All lateral shoots that are produced should be rubbed off till the height of 4 to 5 ft. is attained. Then stop the leader, and select four of the stronger shoots to form the foundation of the head. To

a strong stake, wire ribs should be attached, and these connected with a stronger wire circle of, say, 3 feet in diameter, and to this framework the young growths should be fastened, pinching them, so as to produce a large number wherewith to cover it, and affording frequently farmyard liquid manure-water, diluted with six times its bulk of rain-water. Pinch and regulate the growths of *Fuchsias* grown as bushes, and keep them of a symmetrical shape. Remove the flowers until about six weeks prior to removing the plants to the conservatory.

Kalosanthes coccinea.—This useful greenhouse succulent should be potted into 24's, making use of a compost consisting of loam three-quarters, leaf-soil one-quarter, together with a liberal quantity of lime-rubble and bricks broken small, and let each young growth be supported by a stick. At no time should much water be afforded the plants, it being safer to keep on the dry side than give too much water. Place near the glass in a greenhouse or cold pit, and be careful that cold draughts do not reach them. Propagation is by means of cuttings of the young shoots, placed to the number of five in a large 60, and put into a propagating-pit or frame. When rooted, transfer the plants entire to 32's, in which pots they may remain undisturbed till early spring of the following year, when they may come into the pots in which they will flower.

Caladiums should be transferred to larger pots according to the sizes of plants required. The more vigorous varieties should be placed in 16's or 24 sized pots, and the small foliaged ones may be well grown in 32's or large 48's. The compost should consist of turfy-loam, peat, and leaf-mould, with a considerable amount of sand. When re-established, afford them a light position, and the slightest amount of shade from direct sunshine.

Tuberose.—The early batch may now be transferred to 4½-inch pots for flowering, using a compost of turfy-loam, leaf-mould, decayed manure, and steamed bone-meal, at the rate of one quart to one bushel of soil. Pot successions in small 60's, and place in a frame or intermediate house, and syringe them daily. Reserve roots for potting in a month's time and flowering in the autumn.

General Remarks.—Constant attention must be paid to the progressive potting of seedlings of the many species and varieties, and repotting of plants required for making gay the conservatory, stove, and greenhouse. Amongst them may be enumerated the *Asclepias*, *Torenia*, and *Grevilleas*, which may be potted. *Celsia Arcturus* should be pricked out into pans, and when large enough pot them off into 60's, three in a pot, and repot as they get larger, and in need of more root-space. *Clerodendron fallax* seedlings may be potted singly in small 60's, and placed on a shelf in the stove. Cuttings of *Centropogon Lucyanus* × may be placed singly in small pots filled with sandy loam and peat, and be struck in a hotbed-frame having a top heat of 55° to 60°. Seedlings of *Campanula pyramidalis* should be pricked off to the number of four in a small 60, and being deep-rooted plants, they are better put into pots than into pans. Seedlings of *Streptocarpus* may now be transferred into small pots, and grown on in a moist house or low pit having a maximum night temperature of 60°. As the seed of this plant germinates very slowly and irregularly, the seedlings should be carefully lifted without much disturbance of the soil, and the seed-pans put on one side for future observance. Afford the older plants frequent applications of liquid-manure, made with half an ounce of guano in 1 gallon of water. Growth should be continuous till August, and after that time water should be gradually withheld.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bicton, East Budleigh, Devonshire.

Potatoes.—The land which has been planted with Potatoes after ploughing, should have the chain-harrow passed over it before the shoots appear. The earlier plantings in the garden should be protected as soon as the shoots have come through the soil, by slightly moulding them up with a draw hoe, or covering with litter when frost threatens.

Onions.—Plants from March sowings being now braided, the beds should be stirred with the Dutch-hoe, as the soil is sure to be caked and impervious to the air. Seed of the Silver-skinned pickling Onion should now be sown in lines or broadcast, on ground that has carried some

exhausting crop and is not rich, or has not been deeply dug. If very poor soil, it may receive a dressing of fresh soot. After sowing the seed, rake the surface and afford it a rolling, or beat it with spades.

Spinach.—Sow once a fortnight in shallow drills drawn 12 inches apart, and thin the plants to 6 inches apart. As soon as the winter Spinach-bed can be dispensed with, the plants may be dug in, and late Peas sown, or Broccoli planted. The land can scarcely be made too rich for a crop of summer Spinach.

Parsley.—A moderate quantity of seed may be sown in drills drawn 1 inch deep, and 15 inches apart, and as soon as they are through the soil apply lime and soot in the early morning or just after rain, and when 2 inches high thin to 6 inches apart. Plant out at the same distance apart those raised under glass; and afford water if the soil is dry until well established.

Beetroot.—The seed for the main crop of roots should now be sown, or within the next ten days; see remarks in my Calendar for April 13. The Turnip-rooted is the best Beet to grow on very shallow soil.

Celery.—The March sowings being fit for pricking out, let a piece of ground be made firm and hard, and place thereon a 3-inch layer of rotten manure, and on this one of light rich soil 3 inches thick, make moderately firm and smooth, put out the plants at 4 inches apart, and afford water with a fine rose-can. Surround the bed with boards 6 inches wide made fast to stakes driven into the ground, and on these boards fix some rods to carry the mats or Frigido-mo, as the plants must be shaded (during bright sunshine for a day or two, and protected at night for a fortnight. Ididdle out the Celery seedlings in cold pits in which Violets were grown during the winter. The plants must not lack water at any time. Stir the soil after the lapse of a week. Standard Bearer is a good variety for late spring use.

Cauliflower.—Plants raised at the end of the month of January and pricked out as advised, will now be fit for transplanting on to an open piece of land. Before removing, see that the soil is moist, and that as much as possible is removed with the plants. Plant at 15 inches apart if the variety is a small grower, and 18 inches if a large one. Apply water before the holes are filled in, and continue to afford water as may appear necessary. Dryness of the soil is the chief cause of buttoning in Cauliflowers. These remarks apply likewise to those Cauliflowers planted a month ago.

Brussels Sprouts.—Treat in the same manner as Cauliflowers, except that the distance at which they are set out is not less than 2 feet each way. In these gardens, Brussels Sprouts usually succeeds Parsnips and Main Crop Carrots.

Routine Work.—Keep the Dutch-hoe going among growing crops, destroying weeds, and aerating the soil. Weed walks in the manner best suited to the materials of which they consist.

FRUITS UNDER GLASS.

By MAJ. COLM. MCINTYRE, Gardener to Sir CHAS. TENNANT, The Glen, Innerleithen, Peeblesshire.

Strawberries.—Plants in pots are a great nuisance at times, and especially so in the month of May; yet it is at this time that the demand for Strawberries is greatest. Shelves in forcing-houses will have become too hot for the plants, and the difficulty in many gardens arises when forcing has to be carried on in vineries and Peach-houses. Trees and Vines are all fast covering the roofs, and if Strawberries are near them the chances are that red-spider and perhaps green-fly may be communicated from the latter to the former. This difficulty may be obviated by arranging the plants along the light front stages of well-heated houses, the sloping or stepped back stages answering even better. In such positions, it is advisable to stand the pots on moss very thinly. Arrangements need to be made so that there may be a succession of plants. Crops ripening too quickly may be retarded by a variety of methods for several days, in case an extra supply is required for particular occasions. The expedients are turning the fruits from the sun, shifting the plants to a house with a north aspect, or removing them from under glass into an airy fruit-room or a cool shed. After the fruits are fully ripe, much can be done at this season in cold frames by judicious management.

All plants that can be accommodated in cold or low-heated pits should have their flower-spikes thinned out to the requisite number, and be placed on coal-ashes well up to the glass, leaving space for the air to play freely between the glass and the leaves of the plants. The most forward of these can always be picked out to take the place of those that are ripe and ripening. Supply liquid-manure alternately with water to plants swelling off their fruits. Care must be taken not to apply it too strong, and never in a cold state.

Cherry-house.—Cherries ripening at this time of the year are always welcomed at the dessert. The fruit must be kept dry, but the house nevertheless must be kept atmospherically moist by sprinkling the borders with a fine rose water-pot or the syringe; and air should be admitted constantly, or the condensation of moisture that will take place may seriously affect the fruit, causing it to crack, and certainly impairing its quality. The border at this stage should be quite moist; if necessary, a thoroughly copious application of water may be afforded without delay. Tie-in the shoots as they lengthen, and stop those not required at about the fifth leaf. On the first appearance of black aphides, fumigate with "XL-All," or dip the shoots and leaves that are attacked in diluted tobacco-juice. Ventilate freely on favourable occasions, and when the external conditions are unfavourable recourse must be had to the heating apparatus, so as to insure a circulation of warm, dry air. Trees in pots should be well supplied with water. Protect the fruit from birds by covering the ventilators with netting.

Planting young Vines.—Strong young plants in 6-inch or larger pots, or any that are equally strong or growing freely—preference being given to those raised from eyes this spring—are the best to plant when there are several houses. It is always advisable to keep the early and late varieties by themselves, not omitting to have one or more houses devoted to the heat-loving and best of all Grapes, Muscat of Alexandria. A great deal, however, may be done with one or more vineries; a fair succession may be kept up by mixing the varieties. In this case, the white varieties may be located at the lightest end of the house. Muscates require the warmest position; while the black Grapes, which do not need so much light to colour them properly, may be given the other part or half of the house. Alicante, Lady Downes, Diamond Jubilee, Mrs. Pearson, and Muscat of Alexandria, will all succeed fairly well with the Black Hamburgh. In planting, let the supernumerary Vines be 5 feet away from the front of the house, and also against the back walls, this being preferable to planting in a line between the permanent Vines. The soil in the pots should be moist when the Vines are planted, and the soil of the border should be firmly packed about the balls or masses of turf, no attempt being made to uncoil or loosen the roots, there being no necessity to do this. Apply tepid water gently when the job is finished, and never let them lack water afterwards. Carefully train the rods to stakes till they are long enough to reach the wire trellis. Pinch back the side shoots to the first joint, and remove tendrils as fast as they form. At the first, a brisk growing temperature should be maintained in the vinery, with abundant moisture, and overhead syringing afforded when the house is closed early on sunny days.

A BULB-PRODUCING MUSA.—It will not seem very surprising to those who examine the stem of an ordinary *Musa* to learn that one species, *M. religiosa*, produces genuine bulbs. *M. DYBOWSKI*, to whom we owe the knowledge of this plant, was surprised at its total disappearance in late autumn. On turning out the pot, however, he discovered a crowd of little bulbs, each as big as a Hazel-nut. The plant is a native of the French Congo, and was grown by the late HENRY DE VILMORIN. The plant is, moreover, remarkable for the manner in which its leaves are enabled to resist the force of the wind. We all know the ragged appearance which the leaves of *Musas* have when exposed to the wind, but in this species the leaves are not subject to be torn, but remain unbroken at the margin. The culture required is the same as for *M. Ensete*, but the presence of bulbs suggests the same treatment as is accorded to *Caladiums* and similar stove-bulbous plants. A full account, with illustrations of this interesting plant, is given by M. LEGRAS in the number of the *Revue Horticole* for April 1.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, MAY 7.—Royal Gardeners' Orphan Fund (Annual Dinner at Hotel Cecil). Royal Horticultural Society's Committees, Meeting at Westminster (Presentation of V.M.H. and of Veitch Memorial Medals).

SALES.

WEDNESDAY, MAY 8.—Lilies, Begonias, Border Plants, Palms, &c., at Protheroe & Morris' Rooms.

FRIDAY, MAY 10.—Imported and Established Orchids, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick—52°·3'.

ACTUAL TEMPERATURES:—

LONDON.—May 1 (6 P.M.): Max. 63°; Min. 38°.

May 2.—Dull, chilly, some rain.

PROVINCES.—May 1 (6 P.M.): Max. 59°, Home Counties; Min., 45°, N.E. England.

The Fruit Committee and the Council.

WE have already alluded to the fact that the Council of the Royal Horticultural Society at a recent meeting exercised its right of dissenting from a recommendation of the Fruit Committee. No doubt it was technically right to do so, but whether it was a judicious step to disparage the recommendation of a most competent and wholly disinterested body of experts, is another matter. The practice has lately arisen of giving awards to old, well-known, and meritorious subjects, if, by some chance, they happen to have been previously overlooked. We should not be surprised, if the present practice is pursued, to find Black Hamburg premiated. It would seem as if this were pushing matters to a ridiculous extreme, and perhaps the Council thought this extreme had been reached in the case of Bergamotte Esperen. It may be so, but it must be remembered that this particular Pear does not do well in all places, or in all seasons, and that when it was shown in excellent condition in April from a garden a mile or two nearer the heart of London than Chiswick, the Committee may have thought some recognition of the fact should be made.

In place of giving awards to these old favourites, we would suggest that the Society should publish, say once in every five years, lists of the best, most generally suitable, and most thoroughly tried varieties, thus carrying out, on a smaller scale, the plan adopted in the excellent reports of the Fruit Conferences held at Chiswick. This quinquennial revision would serve to confirm old favourites, to eliminate inferior varieties, and to admit worthy newcomers.

We have often had occasion to note the tendency which the governing body has of doing the right thing in an objectionable manner. In the present instance all friction might have been avoided by simply asking the Committee to reconsider its recommendation.

To the gardener, the term "pricking-out" has a definite meaning as applied to seedling plants in the early stage of development, to cuttings when rooted, which include also the leaf-cuttings of Gloxinias, Roses, Begonias, rooted pinnæ and bulbils of some species of Ferns, the small tuberous roots of Achimenes, Begonia tuberosa, Dracenas, and many others. There are several advantages accruing from the practice which should not be overlooked, such as in the case of seedling plants, that of affording more space for development than would be afforded in the seed-pan and seed-bed; moreover, fresh soil unencumbered with moss or confervæ, is always grateful to young plants, and favourable to their growth by reason of the air having access to the roots. The process favours removal to pots and pans, and in the case of vegetables so treated to the open ground. Some cultivators, in the case of plants raised from seed, seek to economise labour by sowing thinly, and transplanting directly from the seed-pan or bed; and with tap-rooted plants, if the planting be carefully performed, and the tap-root preserved intact, the method is generally satisfactory. Still, for the generality of the plants we have named, pricking-out is best.

Although, speaking generally, all pricking-out follows certain well-defined lines, there are important variations to suit the ends in view. It may have to be performed, in the case of plants raised in warmth, quite hardy really, but rendered tender by treatment. These plants are pricked-out into broad pans, shallow wooden boxes, or pots, and for each species of which some special preparation is needed; and these receptacles placed in warm pits or houses, and afforded bottom-heat in some cases. As the natural warmth of the season becomes greater with the advance of the year, some plants as for example, Phlox Drummondii, German Asters, &c., raised in heat, may be pricked-out in cold frames after being hardened off—otherwise inured to a somewhat lower degree of warmth. The effect of the operation of pricking-out upon a plant is to increase the formation of roots laterally, to create a "mass of roots" that will better nourish and support the plant as soon as it is potted or planted-out, than would otherwise be the case, and enable it to be removed with but little, if any, check to growth; which, in the case of vegetables and salad plants that are required for consumption at a given date, is a matter of much importance, a check always meaning loss of time.

There are several methods by which a check can be obviated, besides the hardening-off process in the case of plants put into a lower temperature, viz., pricking-off as soon as the little plant selected can be handled or be picked up on the blade of a budding-knife or small spatula, and separated from its fellows in the seed-pan; a finely-sifted, suitable kind of soil is made warm, and pans or boxes are filled with it, and one thorough application of water afforded to settle and consolidate it, and to render unnecessary any large quantity being applied for a week or longer, after the plants are pricked out. Sometimes in the case of plants with but few roots, a layer of quarter-inch nodules of loam or peat is placed to the depth

of an inch immediately below the soil, into which the roots will penetrate, and of which each plant will appropriate one or more, and remain attached when finally removed for potting or planting. The distance at which plants should stand when pricked off depends upon the size to which they will grow before being finally transplanted, those of slow growth and small dimensions being placed closer together than those that grow fast, and are when matured of a large size. The chief evil to guard against is blanching, by the crowding together of the plants.

Pricked-off plants in most instances must be afforded shade for a few days, and sometimes the shelter of a close frame, hand-glass, or bell-glass. When pricking-off is performed out-of-doors, unless the sky be over-cast or rain fall, shading must be afforded during strong sunshine; and in the case of pricking-off very early in the spring, protection should be afforded at night.

In a general way the preparation of the seedling is identical, and no mutilation of the roots is called for. Such as have definite tap-roots, as for example the Stocks, Martynia fragrans, Wallflowers, Balsams, Zinnias, &c., should have the tip of the root preserved intact. This practice holds good with the Brassicas, Lettuces, Beetroots, Turnips, Parsnips, Parsley, and all taper-rooted plants, all of which the gardener has at times to transplant in a very young state.

In the case of Celery, which likewise has a definite tap-root, we hold that an advantage accrues in docking this in early life; as by so doing its tendency to go below the bed of manure in the trench is diverted, and more lateral roots form than would otherwise be the case, and these permeating the manure in all directions collect much valuable nutriment. We find, therefore, that pricking-out has many points for the consideration of the man with a small garden, who is desirous of making the most of it, for with his nurse-beds and pans and boxes of seedlings and cuttings, he can complacently wait till his crops, one after the other, are cleared off, with the certain knowledge that his plants are not spoiling, as they certainly would be if left thickly as sown. And being taken whilst very young, the plants are all of one even size, and unlike seedlings standing close together in the seed-bed, some strong and others weak.

ROYAL HORTICULTURAL SOCIETY.—At a general meeting of the Royal Horticultural Society, held on Tuesday, April 23, fifty-two new Fellows were elected, making 340 elected since the beginning of the present year, amongst them being the Duchess of ABERCORN, Lady HENRY TATE, Lady HELEN VINCENT, Lord ALVERSTONE, the Bishop of RICHMOND, and the Right Hon. A. H. SMITH-BARRY.

—The next meeting of the committees will be held on Tuesday, May 7, in the Drill Hall, Buckingham Gate, Westminster. A lecture on "Alpines and other small plants for Walls" will be given at 3 P.M., by Mr. E. H. JENKINS. Preceding the lecture, the President of the Society, Sir TREVOR LAWRENCE, Bart., will present Victoria Medals of Honour to Sir GEORGE KING, K.C.I.E., Miss ORMEROD, LL.D., Mr. GEORGE NORMAN, and Mr. JAMES SWEET. The award of the Veitch Medals will be made at the same time.

—Schedules of the Fourteenth annual flower show, to be held in the Inner Temple Gardens, Thames Embankment, on May 22, 23, and 24, may be now obtained on application to the Secretary, 117, Victoria Street, Westminster. Applicants should enclose a stamp.

THE ROYAL HORTICULTURAL SOCIETY'S DEPUTATION TO BIRMINGHAM.—The members of the deputation, and some of the leading exhibitors and members of the Committee of the Daffodil Show, were invited to dinner by Mr. R. SYDENHAM at his residence in the Bristol Road on the evening of the 24th ult., the company numbering nearly thirty persons. On the first day of the show, a luncheon was provided in the Botanical Gardens, to which the deputation was invited, also the judges and others, Prof. HILLHOUSE presiding; the Lord Mayor of Birmingham being present. On the evening of that day, Mr. JOHN POPE, the Chairman of the Committee of the Midland Section of the National Auricula Society, and Mr. R. SYDENHAM, entertained at dinner at the University Restaurant some of the members of the deputation, and a large party of exhibitors of Daffodils and Auriculas, Mr. POPE presiding. Some interesting speeches were made, and there was also a discussion on the culture of the Daffodil in grass. The social element is sometimes lacking in our horticultural gatherings, and when anything of the kind is attempted, it is rarely done in what might be termed a whole-hearted manner; and particularly is this the case with the special floricultural societies. Birmingham sets an example to London in this respect.

THE PRIORITY RULE.—The general rule followed at Kew, and adopted by most British botanists, in conformity with the rules of the Paris Congress, is to adopt the earliest complete, correct name of any given plant. Our American friends take the earliest name, whatever it may be, whether incomplete or incorrect. Thus the very beautiful *Picea pungens*, so named in these columns by ENGELMANN in 1879, p. 334, is called by some *Picea Parryana*, because ANDRÉ had previously called it *Abies Menziesii* Parryana. According to English practice, this name should not stand, because the genus is *Picea*, not *Abies*; and because the species is not *Menziesii*, but something different; and, finally, because the *Index Kewensis*, which we take to be the standard till reason is given to the contrary, has *Picea pungens*, Engelmann; and it is so called also in the list of Conifers published in the Report of the Conifer Conference in 1891.

NATIONAL ROSE SOCIETY.—A meeting of the General Purposes Committee will be held at the Rooms of the Horticultural Club, Hotel Windsor, Victoria Street, Westminster, on Tuesday, the 7th inst., at 1.30 P.M. The committee will meet at 3 P.M. to consider the report of General Purposes Committee, judges for two provincial shows, and the railway rates for Rose-boxes, and other business; symposium on how to grow and show Tea Roses will follow. H. HONEYWOOD D'OMBRAIN, EDWARD MAWLEY, Hon. Secretaries.

DUTCH HORTICULTURAL AND BOTANICAL SOCIETY FLORAL COMMITTEE.—On the occasion of the meeting held on April 10, 1901, the committee awarded First-class Certificates to Mr. P. W. SUTORIUS, of Baarn, for *Begonia Gloire de Lorraine*; to Mr. J. VAN STOLK, Jun., of Heemstede, for *Cypripedium insigne*, *coloratum*, *callosum*; and to Mr. W. C. BARON VAN BOETZELAER, of Maartensdijk, for *Lælia Jongheana*. A Silver-gilt Medal to Mr. D. J. TAS, of Aalsmeer, for a collection of cut flowers; a Silver Medal to Mr. H. C. HACKE, of Baarn, for a collection of Orchids. Bronze Medals to Mr. H. HORNVELD, of Baarn, for a collection of *Odontoglossum Rossi majus*; to Mr. C. J. KIEKERT, of Haarlem, for a collection of *Odontoglossum*; to Mr. H. C. HACKE, of Baarn, for a collection of warm-house plants. An Honourable mention to Mr. H. C. HACKE, of Baarn, for *Clerodendron Thompsoni*. H. C. Zwart, Secretary, Amsterdam, April, 1901.

MR. J. E. HARTING is about to bring out a new and revised edition of his *Handbook of British Birds*, showing the distribution of the resident and migratory species in the British Islands, with an index to the records of the rarer visitants, with

thirty-five coloured plates carefully reproduced from original drawings by the late Prof. SCHLEGEL. The preparation of this volume has occupied the leisure hours of many years, and is an attempt to show in one volume the precise status of every so-called British bird, distinguishing the rare and accidental visitants from the residents and annual migrants. Divided into two parts, the first portion deals with "British birds properly so-called, being residents, periodical migrants, and annual visitants." The second portion includes the "rare and accidental visitants;" and a special feature of the book is that in the case of every rare bird a list of occurrences is given, from the publication of the earliest records (so far as has been ascertained) down to the end of the year 1900. The reader is thereby enabled to estimate at a glance the precise nature of the claim which any given species has to be considered "British." Some notion of the labour entailed may be formed when it is stated that the number of references in Part I. amounts to 1500, in Part II. to 2325, and in the whole work to 3825 or thereabouts. Mr. NIMMO, King William Street, Strand, is the publisher.

MARKET GARDENERS AS "J.P."—Just recently the well-known suburban district of Isleworth and Hounslow did itself the honour to elect as chairman of its local council a well-known market gardener, Mr. LOBJOIT, who has also been made a J.P. Since then the Twickenham District Council has followed suit, and has selected for similar office and honour that well-known market grower, Mr. W. POUPART. In local government, as in gardening, Mr. POUPART has well won his honours.

LONDON TO KEW GARDENS, HAMPTON COURT, ETC.—Since Thursday last it has been again possible to journey from the Metropolis to Kew by steamboat. There is a ten-minute service over the central section between London Bridge and Battersea, and a half-hour service between Chelsea and Kew. A review of the thirty-six steamboats belonging to the Thames Steamboat Company (1897), Ltd., on May-day, when the river as far as Battersea presented a very gay appearance owing to the procession of the boats, which were decorated with flags. It is a pity we are not to have at present an all-the-year-round service, and lighter, quicker boats than many of those now in use. London should not be content until this fine waterway is provided with the best possible means for making it a popular and useful medium of passenger traffic.

PLANT TRADE WITH ITALY.—The regulations in force against the introduction of *Phylloxera* devastans into Italy make it very difficult to get plants sent from this country to Italian ports, and in many cases the delays involved cause a total loss, especially when, as often happens, they arrive before the permit. The results so far are, that only extremely enthusiastic importers will make a second attempt.

"FLORE DE FRANCE."—The third part of the Abbé COSTE'S illustrated *Flora of France* (WILLIAMS & NORGATE) contains an admirable survey of the botanical geography of France by Prof. FLAHAULT of Montpellier, with an illustrative map. This treatise deserves to be carefully studied by our British botanists, and plant-growers will find much to interest them in its suggestive pages. The woodcut illustrations, though small, are excellent, but no scale is given. The native country of the Horse-Chestnut is now known to be the mountains of Greece. We are not aware that it has been found wild anywhere in Asia Minor, as it is stated to do in the book before us.

EXHIBITION IN ST. PETERSBURG, 1901-2.—This is to be confined solely to the manufacturers and producers of the British Empire, and will be held in the Tauride Palace and Grounds, St. Petersburg, during the season of the year when the members of the Russian aristocracy, officials, army and navy, professional and mercantile classes are resident in the capital. The reports of the British

Consul-General at St. Petersburg show that the trade between Russia and the United Kingdom has declined considerably since 1888. During the years from 1888 to 1899 the trade between Russia and Germany steadily increased till, in the latter year, the imports of German manufactures into Russia were 38.8 per cent. of all the imports of Russia, or 17.3 more than the imports from Great Britain. The British Consul-General at St. Petersburg in his Report issued in October, 1900, wrote as follows:—"It would thus appear that Germany, our most formidable rival in the Russian market, is steadily gaining ground in it to our evident disadvantage, and to this very unfavourable feature of our trade with this country I have called attention in previous reports. Nor is Germany our only rival. The imports to Russia from France, which in 1897 were £2,622,144, had increased in 1899 to £3,006,025; while those of Austria-Hungary had grown in the same period from £2,050,412 to £3,273,136; Switzerland from £503,731 to £748,850; and Holland from £622,944 to £1,213,587. It is hoped that the British Exhibition in Russia will do much to put an end to a condition of things which strikes a deadly blow to our national prosperity. European and Asiatic Russia occupies one-half of Europe and one-third of Asia; the Empire contains every possible variety of soil and of climate, from the icy north to the temperate and sub-tropical regions. Russia possesses vast forests, large tracts of land adapted for agriculture and pasture, with mines of every known metal, extensive vineyards and productive oil wells. The present population is 129,211,213, and the foreign trade in 1899 was £1,399,000. But Russia, if her resources were developed could easily support three times her present population and indefinitely extend her trade. St. Petersburg is easily reached from London by ordinary trains in two and-a-half days. The desire of Russia to extend her trade with the United Kingdom is conclusively shown by the magnificent display the Government is making, and the large expenditure it is incurring at the Glasgow Exhibition. Price lists of British goods have recently been asked for officially by the authorities of the Siberian railways. Juries of Russian and British subjects will be appointed which will award diplomas on the same principle which has been recently successfully followed in Paris. Mr. GEORGE COLLINS LEVY, of 22, Conduit Street, Regent Street, London, is the commissioner for the United Kingdom.

HORTICULTURE IN CANADA.—The Minister of Agriculture for Canada, Mr. G. A. FISHER, has presented his report for last year, which contains an enormous amount of information in a comparative Blue Book of 127 pages. Everything connected with horticulture and agriculture in the Old Dominion is brought under review, from the chemistry of soils, to the production of fowls, and marketing of canned meat. The work done in the experimental farms and centres in connection with hardy tree planting, fruit and vegetable growing, &c., has been of a satisfactory character, and we learn of the success attending the use of lime-water in spraying fruit-trees, and of lime-wash in removing the oyster-shell bark-louse from Apple-trees. The remedy for the latter was first discovered by the horticulturist of the Central Experimental Farm. This farm has been doing great work in testing fruits for cultivation in Canada, and many growers are year by year indebted for the help meted out to them from this point. Concerning Plums, a large number of the American varieties are being tested. Few varieties of European Plums are hardy at Ottawa, and as some of the American varieties are of good quality, and nearly all quite hardy, they will, it is stated, be very useful in districts where the European fruit cannot be grown. Vegetables of many sorts are being tested, and information given as to the chances of success in various parts of the country. It would seem as if the heads of all departments under the Minister of Agriculture have their work cut out for them, and

do it. Altogether the recently-issued Blue Book possesses great interest, and Mr. FISHER's department must be of enormous interest to all Canadians.

LINDLEY LIBRARY.—A copy of the ninth edition of the *Hortus Cantabrigiensis*, a once well-known book, has been presented to the Lindley Library by Mr. DOUGLAS. It was published in 1819, and was edited by FREDERICK PURSH, the author of a *Flora of North America*, the original compiler having been JAMES DONN, the Curator of the Cambridge Botanic Garden. It is interesting as containing a complete list of the plants cultivated at that time in the Botanic Garden, arranged according to the Linnean system. We do not suppose now-a-days such a bare list would run into nine editions, and we are sure no catalogue at the present day would contain, as this does, 319 species and varieties of Heaths, of which by far the large majority are stated to have come from the Cape, although some of these were probably home-raised hybrids. The most useful lists of a similar character now published are the Kew hand-lists. The Lindley Library should be made as complete as possible, so far as gardening books are concerned, and we trust that many will be found to follow Mr. DOUGLAS' example. The Lindley Library is held in trust, so that there is no fear of its experiencing the same fate that befell a former library when the Horticultural Society fell upon evil times. The Library is weak in old gardening books.

FLOWERS IN SEASON.—From Mr. WARE, Hale Farm Nurseries, Feltham, we have received flowers of the new Allium, described in our present issue by Mr. GUMBLETON, as well as flowers of the noble Iris susiana, and a curiously fasciated and synanthic Narcissus.

—From Mr. J. GODFREY, Exmouth, come blooms of Pelargoniums, which show much variety in sporting, one, Madame Thibaut, the parent sent out nearly twenty years ago by a French nurseryman; one, named Princess of Teck, is a sport from it, and grown more commonly perhaps than any other white; Duke of Fife is another sport from Madame Thibaut. The variety named Emmanuel Teas was sent out from France three years ago as a sport from Madame Thibaut, and in this variety the colour of the flower is better, and the flower larger and fuller. The growth of the plant is said to be stronger. The rest are sports from Emmanuel Teas, fixed by Mr. GODFREY last year. It is not often, remarks Mr. GODFREY, that sports show any improvement in habit, colour of bloom, size of truss, and formation of the flower, as in this instance.

TASMANIAN APPLES.—Still more Apples on the way from Hobart. Messrs. ANDERSON, ANDERSON, & Co., of Fenchurch Avenue, E.C., proprietors of the Orient line of steamers, inform us that some 46,500 cases of Apples have just been shipped in their boats—the *Omrak* having on board 31,000, and the *Victoria* 11,500 cases, bound for Tilbury. This will be agreeable news to all concerned, and doubtless there will be more to follow.

FIRE AT A NURSERY.—A fire, which was attended with very serious results, occurred on Thursday evening on the premises of Messrs. JAMES SMITH & SONS, Nurserymen, Darley Dale, Derbyshire. The firm's premises cover an area of over 250 acres, and at about seven o'clock on Thursday evening a fire was found to be raging in the Siberia Nursery, the space affected being between four and five acres. It was at once apparent that the whole of this area was doomed to destruction. To prevent the fire spreading to other parts of the nursery, a trench was dug round the burning part, and by this means wider destruction was prevented. It was, however, ten o'clock before all fear of the fire spreading further was finally allayed, and it was deemed expedient to keep watch for the remainder of the night. The damage is computed to be close upon £1,000, as over a million young plants were destroyed, consisting principally of

Rhododendrons and Azaleas of two and three years old. The cause of the fire has not been ascertained, but it is surmised that a workman, or some other person, dropped a lighted match, or emptied the ashes of his pipe upon the plant-bed, which consisted mainly of peat.

ALPINE BOTANIC GARDENS.—A recent number of the *Bulletin de la Société Botanique de France* contains a notice of a book lately published by M. EMILE BURNAT, entitled *Notes sur les Jardins Botaniques Alpins*. In this volume M. BURNAT asserts that alpine gardens do not, as a rule, render such services to botanists as they might do, and which would be proportionate to the trouble and cost expended upon them. If the sums distributed by the Société Murithienne for its three Alpine Gardens were used for the formation and maintenance of a local herbarium annexed to a library, these resources would be in great measure sufficient to place before botanists subjects of the greatest importance for study, which are not assured to them by the gardens. Letters from MM. CHRIST and BRIQUET assent to the views propounded by M. BURNAT. According to Dr. CHRIST, "Regarded from the standpoint of cool reason, alpine gardens do not bear criticism. The Société Murithienne should be dissuaded from continuing to superintend and maintain them; but it must be admitted that those who gain advantage by them, or are led for enjoyment's sake to continue such a work, do so at their own risk." M. BRIQUET asserts that alpine botanic gardens "have never hitherto been the birthplace of a single scientific work, and that the money expended on these grounds would be a hundred times better employed in the creation of a rich Valaisian herbarium, thrown open to students. But if societies are incapable, however willing, of managing well an alpine garden which might suggest scientific documents, such a garden, placed under the direction of a practical botanist who would use it as an experiment-ground, might be of very great use for the study of various biological or physiological questions." The last paragraph, as it seems to us, contains the gist of the whole matter. It is not the gardens which are in fault; it is the disinclination or inability of the botanists to avail themselves of the splendid opportunities offered them. There is a too great tendency to study dead skeletons rather than the living organism. In many cases there is no help for this; but where it is possible to study the living plant, the advantage of doing so is obvious.

POINTS IN JUDGING CHRYSANTHEMUMS.—The French Chrysanthemum Society has adopted the following scale of points to be acted on by the judges at their shows:—

	Points.
Colour	0·35
Size	0·20
Form	0·15
Doubling	0·10
Habit and foliage	0·20
Total	0·100

DIGESTION BY PITCHER PLANTS.—In the course of a research on the process of digestion in the pitchers of *Nepenthes*, G. Clautriau confirms the observations of previous workers that the glands of the pitchers secrete a zymase (ferment), which, in acid solution, is capable of digesting albuminoids. As in the case of *Drosera*, the presence of a foreign body is necessary to excite the full excretion of the ferment, and its accompanying acid. The amber-coloured fluid found in the pitchers after the process of digestion contains an unknown colouring matter which reddens with alkali. This is not a product of digestion, but is derived from the tannin of the glands. The albuminoids liberated are very quickly absorbed, even in winter, by the plants, at a lower temperature than that at which complete peptonisation takes place *in vitro* with the zymase, so that it is inferred that complete digestion is not necessary for the absorption of the nutrient material by the plant. As soon as albumins are set free they are assimilated,

When the pitcher becomes filled with insects, these begin to decay, the plant then assimilates the nitrogen in the form of ammonia or of amido acids. *Chem. Centralblatt*, 72, 57, Abstract published in the *Pharmaceutical Journal*, 1901, p. 261.

PUBLICATIONS RECEIVED.—*The Horticultural College, Swanley, Kent*, Report, December, 1900. We hear that the number of students has steadily increased, and now amounts to eighty-three, and that there is a growing demand for the services of qualified students, both men and women.—*Report of the Nova Scotia School of Horticulture*, Professor F. C. Sears, Wolfville, N.S.; an excellent illustrated pamphlet, treating of diseases of Apple-trees and how to deal with them.—*Bulletin of Miscellaneous Information, Royal Gardens, Kew*, Appendix II., 1901. Contents: Catalogue of the library, additions received during 1900.—From the U. S. Department of Agriculture, Report No. 68, *Catalase*, a new enzyme of general occurrence, with special reference to the Tobacco-plant: by Oscar Loew; and (Division of Agrostology) Bulletin No. 29, *Grasses in Elliott's Sketch of the Botany of South Carolina and Georgia*; also Bulletin No. 30, *New or little known Grasses*.—*Agricultural Gazette of New South Wales*, February, 1901. With papers on: Saltbushes and Edible Trees, by R. W. Peacock; Saving Sweet Potatoes for Seed, Romulea rosea, and Notes on Cattle, Poultry, Bees, &c.—*Liste des Plantes Cultivées en Egypte* (Société Horticole d'Alexandrie), 1901. The Society's object is to improve the methods of the cultivation of plants, flowers, and vegetables, cataloguing the species according to the localities of Egypt where they are most abundantly grown, with a view to experimenting on acclimatisation, and other details.—*Journal de la Société Nationale d'Horticulture de France*, March. This includes various reports and announcements, as well as notes of botanical and horticultural interest.—*The Illustrated Carpenter and Builder*, April 19.—*The Tropical Agriculturist*, April. This contains an article by Mr. J. B. Carruthers on "Cacao-pods and their Seed," and notes and correspondence on Cardamon-cultivation, Coco-nuts in the Kelani Valley, Royal Botanic Gardens, Peradeniya; Cocoa and Chocolate, and similar subjects.—*Bulletin of the Botanical Department, Jamaica*, April. Contents: Conservation of Soil-manure, Juniper Cedar of Jamaica, and Banana-conference.

THE BOTANIC GARDENS, VALLETTA, MALTA.

No one familiar with English botanic gardens, with turf, shrubs, trees, and a park-like character, with ornamental water, &c., must suppose such can possibly exist in Malta. The botanic garden here is one of the oldest in existence, dating from the 17th century, but is by no means large, and reminds one somewhat of the old botanic garden at Cambridge in the "forties." It is railed off on one side from the main road, but walled in on the others. Dr. Debono has certainly made the most of it. There is a long trellised walk on entering, covered with creepers, Roses, &c., leading to the Fern-house (see fig. 103). There are eight native Ferns, six of which are British, including the little *Gymnogramme leptophylla*, which reaches Jersey. The Maidenhair Fern is abundant in places, and used for "bomboli," or porous water-bottles, on the outside of which the rhizomes are fixed in clay, so that by keeping the bottle constantly filled with water, a dense mass of delicate foliage is formed over the bottle, which is suspended. Of course, other Ferns of the usual kinds are grown. A shady walk runs along the side by the road where several foreign trees are planted, such as the Date-Palm, which bears no fruit; *Chamærops humilis*, *Ailanthus glandulosa*, *Datura arborea*, with its long white trumpets; *Adhatoda vesica*, *Oleanders*, *Melia Azedarach*, and *Lantanas*. These latter are common elsewhere in Malta. Oaks are represented by *Quercus suber* and *Q. ilex*; and Firs by *Pinus Halepensis*, not unlike a Scotch Fir. Of Figs there is *Ficus indica* the Banyan, the *F. Carica* var. *caprificus*, which always grows out of rocks or walls, the fruit of which is inedible, being full of insects ("blastophaga"). *Juniperus phoenicea*, *Cratægus Azarolus*, which also occurs in some of the

"wadys" or river valleys; and Castor-oil trees, growing to a height of 15 feet at least.

There is a good collection of several of the more important native herbaceous plants, such as *Acanthus mollis*, *Tulipa sylvestris*, *Iris germanica* and *foetidissima*, both of which I found wild in the island; *Hypericum ægyptiacum*, with dimorphic flowers; *Urginea* (*Scilla*), the medicinal squill; and *Scilla sicula*. *Sempervivum arboreum* forms large plants, with massive corymbs of yellow heads; *Phlomis fruticosa*, with large orange labiate flowers; and magnificent *Euphorbias*, such as *E. dendroides*, *E. melapetala*, &c. There are two native species of *Narcissus*, *N. tazetta* and *N. serotinus*; as well as *Pancratium maritimum*, which grow in the sand

A curious Crucifer, *Enarthrocarpus pterocarpus*, introduced itself about fifteen years ago, and has also begun to spread.

The small water-tank contains a few aquatics, while Bamboos and *Arundo donax*, a native, form clumps around it.

Numerous plants are grown for their flowers only, and need not be enumerated, as the botanic garden has to be self-supporting, neither the Government nor the University contributing to its maintenance.

The view, see Supplementary Illustration, is taken from the corner near the entrance, and from the outside. The dome-shaped structure is one of the numerous Maltese churches; it is dedicated to the

ALLIUM ERDELII.

THIS distinct and handsome Garlic is a native of Palestine, and has bunches of pure white flowers, with a distinct claret-coloured centre. It is well figured in the 105th volume of the *Botanical Magazine*, plate 6426, from the flower of a single bulb (found still alive amongst some dried herbarium specimens), which bloomed in the open border at Kew in the year 1879, but has since been lost to cultivation till recently re-introduced (fig. 104). *W. E. Gumbleton*.

FLORISTS' FLOWERS.

CHRYSANTHEMUMS FOR COVERING WALLS.

THERE are often spaces at the bottom of high garden walls, and bare low walls about a place, which, if a few simple instructions are carried out, might be made attractive. A wall facing south is, of course, the best, although the *Chrysanthemums* succeed on an east wall, a fair amount of sunlight reaches it in the autumn; and if the wall is provided with wide coping of stone or brick the better for the plants, preventing the blooms getting wetted from rain. It is the alternation of rain and frost that cripples the flowers. Another chief point is to grow only those varieties that are suitable for the purpose, and these are the reflexed petaled varieties of small size, among Japanese Pompoms and single-flowered sections upon which the moisture does not readily lodge.

If the wall measures 5 feet to 8 feet in height, it will have an advantage over dwarf walls, as the flowers will be large and more numerous. The wall being 8 feet high, and large and small blooms in quantity being desired, procure a sufficient number in April and early May of plants that bloomed in pots the year previously. These are better than young ones from cuttings of the current year, owing to the extra number of shoots they produce at the base. Remove part of the old soil from the roots and plant them close to the wall at a distance of 3 feet apart. If the soil is fairly good dig it deeply, adding half-decayed stable-manure freely. Should the soil be of a poor quality, let it be replaced with fresh soil for a distance of 18 inches from the wall, and 12 inches deep, adding refuse from the potting bench, decayed vegetable refuse, turfy loam, and manure. Plant the large-growing varieties at the distance named, and between these plant the Pompoms and single-flowered varieties, which will cover the lower part of the wall quite nicely, thus furnishing it from top to bottom with bloom. Make the soil about the plants firm, and when they begin to grow, water them freely. If the plants were of good size the year previous, they will start into growth with many shoots from the base. Select six of the strongest shoots on each plant, and remove all of the others, except in the case of Pompoms and single-flowered varieties, which may have eight or even ten shoots. When the branches are long enough, spread them out thinly, and fasten to the wall with nails and shreds, securing them as growth proceeds. Do not top the branches. When the first break takes place, select three of the strongest shoots on each original stem, or more if space will allow, some kinds requiring less space than others owing to the length of the foliage, taking off the remainder, as it is not wise to overcrowd the growth. Buds will be formed at the point of each shoot toward the end of August. The number required must then be determined, as one flower to each stem is sufficient when size is the chief consideration. Where quantity and quality of bloom combined are the points aimed at, it is well to allow about three stems on each plant to produce a single bloom each, and from all other shoots remove the flower-buds, allowing the plant to make another natural break. The result of this will be an increase of the branches, and of blooms, as these new shoots will not require disbudding; they will



FIG. 104.—*ALLIUM ERDELII*: FLOWERS WHITE WITH A PURPLE CENTRE.

of St. Paul's Bay. *Allium* is well represented by the Leek (always bulbous, wild), *A. roseum*, *nigrum*, *neapolitanum*, &c.

The only plant peculiar to Malta is *Centaurea crassifolia*. Fine specimens are grown in the botanic gardens, for one of which I had to thank Dr. Debono, and it is now in the Botanic Gardens, Cambridge.

There was a good series of native Orchids, which included nine species of *Ophrys*, seven of *Orchis*, three of *Serapias* and *Spiranthes autumnalis*. The "Bee" *Ophrys*, curiously, only grows in wet grass by a rivulet, in one spot only, just as *Ranunculus ophioglossifolius* does. One plant Dr. Debono would be glad to get rid of; it is *Oxalis cernua*. It was introduced in 1806, and has spread by bulbs only, as it never seeds in the northern hemisphere, from Malta to N. Africa (from Egypt to Morocco), and to S. Europe (from Gibraltar to the Greek Islands). It infests every part of Malta.

conception of the Blessed Virgin Mary, called "Sarria." The Gothic building is the Wesleyan church. A Date-Palm stands conspicuously within the gardens. The whole stand within the inner and outer fortifications, called "Floriana." The cathedral of the ancient capital, Citta Vecchia, is not visible on the horizon, on the extreme right of the view. It is from those distant hills that water is brought to Valletta. The Floriana water-tower is on the left of the view. *George Henslow*.

TRADE NOTICE.

THE FIRM OF A. DALLIERE, GHENT.

WE are informed that the business of Nurseryman, carried on by the late M. Alexis Dalliere at the establishment in the Chaussée de Bruxelles, Ghent, will be continued by his widow as heretofore, and the title will not be altered.

then produce clusters of bloom on stems from 1 foot to 2 feet long, and will be valuable at a time when the bulk of the regular *Chrysanthemums* of November are past.

If the wall is lower, and large blooms are required, the method of training the plants must be altered, and Pompons should not be planted, only the large-flowered varieties. Plant these at 2 feet apart. Secure the stems to the wall; train in a slanting direction across one another, which allows of more branches being laid in without extending them beyond the top of the wall. Thin the branches at the breaks, and select the buds as advised earlier in this note; but if quantity of flowers is the object, and the wall is low, top the shoots when about 6 inches long, and repeat the topping (when 6 inches more growth has been made—after that allow the shoots to grow away uninterrupted).

As soon as the roots have taken possession of the new soil, apply weak liquid-manure freely, increasing its strength when the flower-buds have formed. After hot days let the plants be well syringed, which keeps the foliage clean and healthy.

There are some varieties so valuable for wall culture that they should not be omitted from any list, viz.,—*Japanese*: Elaine, Source d'Or, Mrs. Horril, Peter the Great, Madame Louise Leroy, Mdle. Lacroix, Thomas Wilkins, Pride of Madford, Vivian Morel, Charles Davis, Phœbus, President Borel, Niveum, Mrs. J. Lewis, G. W. Childs, Lady Randolph, G. C. Schwabe, and Etoile de Lyon.

Of Pompons: Snowdrop, Primrose League, White Trevenna, Golden Circle, Black Douglas, St. Michael, W. Sabey, Rosinante, and its yellow sport, Nelly Rainford.

Of single-flowered varieties: Mrs. Langtry, Purity, Mary Anderson, Jane, Yellow Jane, and Admiral Sir T. Symonds are good. *E. Molyneux*.

NURSERY NOTES.

MR. JAMES CYPHER'S, AT CHELTENHAM.

A BRIEF visit paid recently to this nursery disclosed numerous *Dendrobiums*, profusely loaded with blooms. The plants, to be fully appreciated, must be seen, as a mere description of them is an impossibility. That universal favourite species, *D. nobile* and *D. n. nobiliss.* were very fine; and exceptionally fine, too, was Cypher's form of *D. nobile*, the chastest of the *nobile* group; while other varieties were *D. n. marmoratum*, whose sepals are spotted; *D. n. Virgil*, having a very dark-coloured lip, and pure white sepals; *D. n. Sanderianum*, and *D. n. Cooksoni* was also fine. The various plants of *D. Ainsworthi* showed great freedom of growth, as also abundant bloom. *D. Findleyanum*, *D. atrovioleaceum*, *D. melanodiscus*, *D. rubens grandiflora*, and many of *D. Cybele*, of which last there were many distinct varieties, the finer being *D. C. nobilior* x. Very striking was a plant in bloom of *D. Schneiderianum* x. = *D. aureum* and *D. Findleyanum*, the intense orange tinted lip of this hybrid being a remarkable point. These are but a few culled from the collection. There were observed many seedlings either in flower or expected to flower for the first time this season.

It is worthy of remark that Mr. Cypher cultivates his Orchids in small, low, ordinary glass-houses, with no extraordinary means of ventilation, but also with a total absence of draught. How much of his success is due to the simplicity of the arrangement can only be guessed.

Cattleyas, Lælias, *Odontoglossum crispum*, and *Cypripediums* are largely cultivated. Of the last-named, a fine batch of *C. villosum* was in flower, the plants being in rude health, and the flowers of large size. I remarked four dozen examples of *Oncidium Marshallianum* furnished with flower-spikes in a forward state, and some *Epidendrum Stamfordianum* and *E. O'Brieni* were noted. *J.*

MESSRS. BARR AND SONS.

DAFFODILS, EARLY AND LATE.—“Almost all the varieties are blossoming together,” said Mr. William Barr, when we looked in at the Long Ditton Nurseries on April 26. The cold weather had prevented the early ones from “take(ing) the winds of March with beauty,” but in the meantime, the later ones were getting through their preparatory stage, until the sudden spell of unusual warmth about April 19 had the effect of levelling them all up. The nurseries, therefore, presented such breadths of yellow colour of many shades, that it would be idle to attempt a description of the scene, unless the standpoint be from the comparative degree; and we say that of the many fine displays we have seen at Messrs. Barr & Son's establishment, this was the richest. But there is a very obvious disadvantage attending such a prodigal display, for we have to make up our minds to a very short season of bloom; and Herrick's lines will be unusually appropriate—

“Fair Daffodils! We weep to see
You haste away so soon.”

There was little time to be lost in moralising, however, for visitors were entering at every gate to see the fleeting picture, and so with Mr. Barr we hurried off to see the expensive treasures that at present are carefully protected from damaging winds by lath-made walls or houses. On our way there was the pretty little *Narcissus triandrus albus*, upon some stonework. It looked very beautiful, but its effect would have been even better had the flowers been over a green carpet. The double-white *Arabis* near to, also upon some stonework, was flowering very strongly; it is a capital plant, and as many hardy plant growers may not have obtained it yet, our note may be useful. By this time our attention was directed to the fine new yellow trumpet Daffodil King Alfred, already seen at some of the exhibitions; Weardale Perfection, a superb bicoloured trumpet, still very rare; and the lovely pale coloured Madame de Graaffe, with an ample rim to the trumpet, and which is not surpassed by any modern variety of the same type. All of these have been figured in our columns. Messrs. Barr's new variety of the Poet's *Narcissus* “Glory” is a very fine one, being large in size, unusually pure in its whiteness, and having a richly coloured crown. The Rev. G. Engleheart's variety “Cassandra” growing near by, has rather better form, the segments being wider towards the base, and consequently imbricate, but it is less in size (as seen at Long Ditton), and appeared to be less white; it is a pity to compare them with each other to the prejudice of either, for both are very beautiful. A new white trumpet Daffodil of large size has been named after Peter Barr, who at the age of 75 has just left the New Hebrides, and hopes to travel from Cape Town to Egypt by land, beside having many other adventures before coming home. This white trumpet with a yellow interior base may live to be as good a veteran. Next was General Roberts, the new yellow trumpet variety already referred to in these columns; it has short, broad, somewhat pale-coloured segments, and rich trumpet with good lip. N. Leedsii “Maggie May” is a delightful flower, and although we have seen it many times, may not be described as common, whilst the bulbs remain at the price of 12 to 15 guineas! *Incomparabilis Gloria Mundi* has a very rich orange-coloured cup; and *Glory of Leiden*, which is the last of the rarities we will mention, might almost be termed a “starrer,” for its bold, rich, yellow trumpets do not “nod,” but look upward.

We can only dwell momentarily among the beds out-of-doors, however much we would like to do so. *Stella superba*, a bicolor of the *incomparabilis* section, was marvellous, and Mr. Barr says it is a capital grower; *Duchess of Westminster* (Leedsii), John Bain (Burbidgei), very suitable for naturalising in grass; Frank Dyke, excellent for the same purpose, owing to its pretty “winged” appearance; the

well-known Emperor and Empress; Mrs. Langtry (Leedsii), with a yellow ring on the cup; Ray Smith, a yellow trumpet variety, with broad, glaucous foliage; Hume's Giant, and Victoria, were among the most noteworthy varieties in this extensive collection. Victoria is not only one of the new and valuable trumpet varieties (see fig. in *Gardeners' Chronicle*, June 12, 1897, p. 380), but it is very suitable for forcing purposes, being earlier than Horsfieldi, and following Golden Spur. Then there is Lucifer, an *incomparabilis* variety, raised by Mrs. Lawrenson; its rich, orange-coloured cup is one of the most remarkable developments of colour in the whole genus *Narcissus*.

We cannot close this note without a reference to the gorgeous Tulips, including T. Greigii, that helped to make the nurseries so gay; nor the Hyacinths, and especially the Grape Hyacinths, that formed such panels of blue. Such a grateful scene as *Muscari concinna* (Heavenly Blue) makes upon a hedge-bank which has been planted with this variety, is one that must remain ever in our memory.

Obituary.

D. T. FISH.—Few names in the horticultural world were better known than that of D. T. Fish, whose death on the 22nd ult. it was our painful duty to announce in our last number. Whether as a gardener, an exhibitor, a judge, a writer, a lecturer, an orator, a politician, a town councillor, or a religious teacher, he made his mark. His zeal and energy till quite recently were boundless. He threw himself into everything he undertook with a fervour that was really astonishing. On one occasion we remember to have seen Fish at some railway junction, and while waiting for his train he was writing his report of a flower show for the *Gardeners' Chronicle*, resting his paper on some bench on the platform, which was certainly not an ideal writing-desk. Not many now remember the provincial show of the Royal Horticultural Society at Bury St. Edmunds, but those that do will recall the fact that its success was in a great measure due to him. So arduous were his labours on that occasion, that for once he succumbed to over exertion. For these services, Fish was rewarded with the honorary Fellowship of the Royal Horticultural Society. Some time afterwards, during the evil days of the South Kensington régime, some one discovered that the Council had done an illegal act, and Fish was deprived of his well-won honours. Of course, he was bitterly mortified, as well he might have been, though in the circumstances no other course could probably have been followed. Happily, means were subsequently taken to repair this unwitting injustice, and Fish was latterly a life Fellow of the Society.

David Fish was born on September 25, 1824, close to Old Scone, Perthshire, where David Douglas was born—as he was fond of narrating. He was a garden apprentice in Scone Palace Garden, the property of the Earl of Mansfield. The Earl was an enthusiastic lover of trees, many of them of Douglas' introduction, and it was one of the duties of young Fish to cover up the Conifers on frosty nights, as their hardiness was then not proven. While he was at Scone he paid some attention to British botany, and made a large collection of Perthshire plants. Leaving Scone at an early age, Fish placed himself at Putteridgebury, near Luton, under the tuition of his brother Robert, then a noted gardener, and afterwards a constant contributor to the *Journal of Horticulture*. David Fish also spent some time in the nurseries of Messrs. Backhouse of York, and Knight & Perry, the predecessors of Messrs. Veitch at Chelsea. Afterwards we hear of him as head gardener at Broke Hall, Suffolk, where he came under the tuition of Donald Beaton. Then he went to Glevering, where he did not remain long; and to Kirkleatham Hall, Redcar. For many years he occupied a similar post at Hardwicke House, near Bury St. Edmunds, and this portion of his career was the most amply filled. The death of Lady Cullum

served to sever his long and honourable career at Hardwicke, and he subsequently devoted himself to the duties of county council lecturer in Cambridgeshire and other counties, doing much to promote the extension of fruit-culture in the eastern counties. Literary work also occupied much of his time, and in addition to his contributions to our columns, he superintended the horticultural departments of the *Bozcar*, and of the *Agricultural Economist*. He was also the editor of Cassell's *Dictionary of Popular Gardening*, and himself contributed much to that work.

He removed to Edinburgh in 1896, and gave numerous lectures in that city, in Dundee, and other parts of Scotland, as well as in Huntingdonshire.

His services were frequently in request as a judge at flower shows; and he always took a prominent part in the great co-operative displays at the

of Sunday, April 28, attended by a deputation of about a dozen members of the Scottish Horticultural Association. A wreath was sent by the association, bearing the inscription, "In grateful remembrance of their much esteemed and eminent Horticultural Brother, from the Scottish Horticultural Association."

HOME CORRESPONDENCE.

IRRITATION TO THE SKIN CAUSED BY PRIMULAS.—In reply to "Rus in Urbe," I find that the leaves of *P. sinensis* are apt to cause some persons irritation of the skin when handled. The *Heliotrope* has the same effect. I was seriously poisoned by the leaves of *P. obconica*, and would not now

THE FARNINGHAM SITE.—The Royal Horticultural Society is to be congratulated on the result of the meeting on Tuesday, April 23, and it is to be hoped that we shall hear no more schemes for the purchase of land for an experimental garden. A point was raised by Mr. Veitch and Mr. Shea as to its being contrary to the terms of our Charter to apply the funds of the Society to buying or renting land for the purpose of erecting a building in which the shows may be held. This point ought to be cleared up; if it be so, then by what right do we rent the Drill Hall, and incur the expenses of the Temple Show? *Alfred O. Walker, Maidstone.*

THE HORTICULTURAL HALL.—With regard to the discussion at the meeting of the Fellows of the Royal Horticultural Society, and the correspondence which has appeared in connection with the Hall question, there is one very essential point which has only been touched upon by one side, viz., the incompatibility of a Hall with the charter of the Society, and until the existence or non-existence of such an obstacle is made perfectly clear, it is obvious that adequate support will never be forthcoming on the one hand, or on the other that the Fellows will reconcile themselves to a different project. The Fellows present were advised at the meeting by members of the Council to study the Charter and see for themselves how it stood in the way, but I venture to think that as few or none of us carry that Charter in our pockets, it would be much better if the obstructive clauses were published, reasons being given at the same time why they were not considered an obstacle when a Hall was formerly so strongly advocated by the Council. I am aware that a new Charter has since been acquired, but I am not aware that any such material alteration was inserted as precluded the attainment of what so many Fellows consider to be a vital aim of the Society. If the Charter be so framed it is a great pity, and its amendment should be obtained if possible. Anyway, now that the opinion of the Fellows in favour of a Hall has been so unmistakably manifested, and a definite nucleus of support promised, the next thing is to know exactly how the practicability question stands, so that it may be generally known what is the nature of the impediments, and the possibility of removing it, if it really exist, be seriously considered. From the spirit evinced at the meeting, I am perfectly sure that were this point definitely cleared up, and support heartily invited by the Council, ways and means would be forthcoming which would provide the Society with a proper home as a fitting celebration of its forthcoming centenary. Two things, however, are essential, cordial co-operation all round, and no fog about the facts. *C. T. D.*

THE ROYAL HORTICULTURAL SOCIETY: THE CENTENARY.—Again the horticulturists of Great Britain generally, as well as the Fellows of the Royal Horticultural Society, owe their earnest thanks to the *Gardeners' Chronicle* for important assistance, most ably rendered at a critical period. The result of the meeting on April 23 was both satisfactory and convincing, and the prompt recognition of this by the President, as shown by his action in declining to take advantage of the objectionable bye-law which would have permitted voting by proxy at a subsequent meeting, was exactly what we should expect from a gentleman like Sir Trevor Lawrence. The letter by Sir W. Threlton-Dyer is the most masterly and logical review of the Society's duties, dangers, and responsibilities that has ever been published. It cannot be too carefully read by all who are earnestly concerned respecting the future welfare of an organisation which is becoming rapidly more powerful every year. With this growth and increased capacity for beneficial work, there is a corresponding need for greater caution in the conduct of its affairs, and any serious division of opinion amongst its supporters would speedily cause a relapse into the old order of things. Let the question of the Centenary celebration be discussed in a calm and reasonable manner, and there can be no doubt whatever that it can be rendered worthy of the Society and the occasion. For myself, I am convinced that the provision of a suitable hall for the Society's meetings would not only conduce more to its advantage and credit in every way, but if a scheme be carefully devised on the broadest possible basis, it will secure an adequate financial support. I am now writing from personal knowledge of the opinions of some who are well able to aid in a material degree. It would be a graceful



THE LATE DAVID TAYLOR FISH.

Crystal Palace. He was always striving to benefit his fellow-gardeners, and ceaseless in his endeavours to promote the progress of the art he loved so well.

He was a most prolific writer, too much so, perhaps (especially from the point of view of the compositor, as his handwriting was by no means of the most legible character) and a fluent and effective speaker; the brilliancy of his imagination, his readiness of pen, and the copiousness of his speech, sometimes produced the impression that he could not be a good practical gardener. Those who knew how well Hardwicke Gardens were managed, and those who remember his success as an exhibitor, will know how erroneous such an impression was. As a man and a colleague he was high-principled, right-minded, warm-hearted, just. His sympathies were wide, his appreciation of the true, the beautiful, the good, beyond average. A full account of Mr. Fish's life, up to the year 1875, is given in our issue for May 22 of that year, and should be studied by all gardeners.

The interment of the remains took place at Warriston Cemetery, Edinburgh, on the afternoon

handle the plant without gloves, and will not permit a plant of this species to be grown if I can help it in any greenhouse under my charge. *H. H., Nurseries, Downfield, near Dundee.*

FROST IN BEDFORDSHIRE.—Plum, Cherry, and Pear-trees here are flowering this year with the utmost profusion, and the prospects until this morning (April 29) were extremely satisfactory. We have now registered a frost that is likely to prove disastrous, as the sun is rising in a cloudless sky, and the trees are all fully exposed. The minimum temperature on the ground was 22° Fahr. (10° of frost), and 24.5° in a case at 4 feet above the surface. Fortunately, the air was very dry, as at 6 P.M. on the previous night (April 28) the relative humidity was only 63 (100 representing complete saturation), and this is very unusual here at that time of day, being generally nearer 80. This may prove the saving clause, but at present it is impossible to say what the result will be. Gooseberries, red, and black Currants are also in full flower. *R. Lewis Castle, Ridgmont, Beds.*

act on the part of the Council to afford the Fellows an early opportunity to discuss the preliminaries, not with the object of settling the whole affair at any one meeting, but to obtain a full and free expression of views, and to get an idea of the amount of help likely to be rendered. *F.R.H.S., Midlands.*

— In relation to the future Hall of horticulture, now shown to be not only not quite as "dead as a door-nail," but actually kicking with unmistakable energy, we have been reminded in your issue of this day, containing the letter of Sir W. T. Dyer, of the gracious countenance given by the King to the idea of a Hall in His Majesty's own words:—"I sincerely hope your labours in that respect may be successful, for I feel sure that such a hall will be of the greatest use and advantage." This link with royal favour for the scheme might be made the point of departure for early and complete success if His Majesty were directly approached on the subject. The utter hopelessness of securing a site worthy of the occasion, and therefore in park-like environments, such as would be the happiest concomitant of a Hall of horticulture, is altogether out of the question in London, unless the moral claim for the grant of such a site, on public grounds, were to cause the intercession of the King in favour of such a scheme to be developed in one of the central parks of London. It must be borne in mind that the delay that has supervened in ascertaining the Fellows' preference and bent of mind for the Hall scheme has brought us into very close touch with the incidence of the Centenary of the Society itself in 1904. The acquisition of a suitable site may be delayed until the completion of the edifice in time for an exhibition which should be made international, as the proper method of celebration of the Centenary, is altogether out of the question. I have already alluded to the Green Park in this connection on p. 255 of a former issue, but should this site be considered too precious from its proximity to Buckingham Palace, now again prominent in Royal favour, there would be the alternative of a site in Kensington Gardens, to which I wish to draw attention. *H. H. Raschen.*

— Since returning from the meeting at the Drill Hall this afternoon, the question has arisen in my mind (and doubtless in the minds of many others present) as to the position of the Council after the adoption of the amendment to the resolution proposed. Will they continue to look for and view sites for the new Chiswick, and call meetings of the Fellows to approve them or otherwise? To me, the necessity for a new garden seems to be far out-weighted by the pressing need for a larger, if not an ideal, Hall; and this appears to be the general opinion. Under these circumstances, would it not be wiser, after due time for consideration and discussion, to take the final decision of the Fellows on the subject of the Centenary celebration? The Council would then be able to work harmoniously with the Fellows, as they have done in the past, to the great benefit of the Society. *A. F. T.*

— I do not think that it has been conclusively shown that the Royal Horticultural Society's garden at Chiswick is not doing a good work; it is at least a good object-lesson in suburban gardening, and now that so much of English life is city and suburban, such an object-lesson is a national benefit. I had a look round the Royal Horticultural Society's gardens at Chiswick last autumn with the superintendent, and the health of things in general was apparent to a countryman. The Apples and Pears were carrying fine crops of good fruits, and the Peach-trees on walls likewise, and healthy to boot, a kind of tree very sensitive to climatic influence. Tomatoes were carrying a fine crop in rows across a border, and a trial quarter of Strawberries looked very healthy; and all the occupants of the glasshouses looked healthy and well. But I quite agree with the editorial remarks that a London Hall of meeting for the Royal Horticultural Society is much to be desired, and as horticulture in a country like our own is a subject of vast national importance, would it not be advisable to approach the Government to grant a site for a Royal Horticultural Hall, and with the name of Victoria attached, would be one more appropriate memorial of our late beloved Queen. *R. M., Newbury April 15, 1901.*

VALERIAN PHU AUREA.—I read with much amusement in last week's *Gardeners' Chronicle*, Mr. Harrison Weir's experience of cats and Valerian.

Perhaps these few remarks of mine may help to enlighten him a little. By some chance a portion of this plant had been bruised, or else the roots had become exposed and dry, in which stage they (the roots) give off a very peculiar and not over-pleasant odour, exactly the same as that of female cats in certain stages of their existence. Had Mr. H. W. been able to catch all the cats he saw at his plants, he would have found them all to have been "Toms" with golden eyes. The fact of them eating up his plants only added more to their "mad frolics." Valerian-roots may be procured at any good chemist in a dried state, as it is often used by people who have to preserve game and other things from our "household pets." By rubbing the roots to a fine powder, a trail is made where "Tom" usually frequents. It has such an effect on "Master Tom," that he will follow it out, and to my certain knowledge it has been the cause of him being landed in a trap. *Edwin Bache.*

SPARROWS AND CROCUSES.—In reply to "Rus in Urbs," p. 270, I think it is something more than "pure cussedness" which make sparrows so destructive to yellow Crocuses. They are not alone in this respect; pheasants, also rats and mice being even more destructive, as they will search out and destroy the corms wholesale. The period when they are most destructive is just as fresh growth is starting. So peculiar are they in this respect, that they will not ever wait for the colour of the flower to show, even in embryo. Some years ago I had alternate clumps of the different coloured Crocus in a long row, and these depredators would search out the yellow regularly, whilst the light-coloured and purples were left quite unmolested. Sparrows wait until the flowers show before commencing their depredations, whilst pheasants, rats, and mice will start even before growth is visible on the surface. Of the two evils, I would sooner have the despised sparrow to deal with. There is evidently something very palatable in the bulb. I really believe that if the bulbs were mixed in a box, rats and mice would find out the yellow ones, devour them, and leave the other colours untouched. *A. Young, Willey Court Gardens, Stourport.*

— I have, I think, more than once stated in the issues of the *Gardeners' Chronicle*, that the part eaten by the sparrows is the short, succulent flower-stalk; the stamens, &c., are not touched. This I have repeatedly verified by personal observation at a few yards distance. It may be well to reiterate my theory, viz., that the birds are in quest of juicy food, larvae, &c., not being available at Crocus time. This year, with me, the nuisance has been greater than ever. It is known to some of my friends that I have occasionally thought the sparrow rather an ill-used bird, and I once read an address at a local society, taking his part. It was a long time ago, and probably I did not then grow Crocuses! *R. McLachlan.*

A HOUSE OF POTATOS.—At Farnham Mr. Mortimer has a long span greenhouse just at present entirely filled with Potatos in pots. These stand in five rows on either side. There are just 300 of 11-inch pots. There are some half-dozen of varieties, all early, and of both round and kidney. The whole were potted early in February, after being properly sprouted in warmth, and every tuber was disbudded down to two shoots only. The benefit of that disbudding is seen in the tops, which, whilst not being too thick, are yet very stout and luxuriant. There was throughout not a failure. What might be regarded as the primary or market value of such a method of growing early Potatos it may be difficult to say, but the cost of production is not considerable, whilst the house and pots also can be used for Tomatos in ample time to secure a good crop in the autumn. In point of culture, however, the Potatos presented a first-class example. *A. D.*

PERENNIAL DELPHINIUMS AS ANNUALS.—In reply to your correspondent, Mr. E. H. Jenkins, on this subject, on p. 222, I would state that the locality in which I have obtained the results published on p. 158 is as below, and if Mr. Jenkins has any knowledge of the soil in this district (which is one of the poorest in England), he must admit that it is not one which would be recommended for growing Delphiniums by those who sell them. My contentions are backed by experience, and I can assure your readers that 95 per cent. will flower from the spring sowings the same year.

My methods are the same as Mr. Jenkins' in the matter of sowing the seed, and I may state that it was by this method that I discovered the usefulness of the one which I recommended. It may surprise your correspondent to know that I showed some flower-spikes at the September meeting of our gardeners' society, nearly all of which were 6 feet in height, and were cut from spring-sown plants of excellent varieties. My comparison with *Campanula pyramidalis* was from a point of elegance, which, I think, most persons will admit. If Mr. Jenkins will pay me a visit in August or September, I shall be able to give him an ocular demonstration of what may be done with the Delphinium, and also supply him with some seed of my varieties. *F. W. Smith, The Hollies, Weybridge, Surrey.*

THE "OLD" AURICULA.—Anent the interesting leader in the *Gardeners' Chronicle* on p. 261. In Gerard's *Herball*, 1633 edition, a whole chapter is devoted to these plants, containing six illustrations (chap. 275, pp. 784 to 787). He calls them "Beare's Eares," and adds "that they grow naturally in the Alps and Helvetian mountains"; most of them do grow in our London gardens. I would much like to know if this chapter appears in the first edition published in 1597? *Donald McDonald, Bezeley.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

APRIL 23.—Present: Dr. M. C. Cooke (in the Chair); Messrs. Holmes, Bowles, Groom, Saunders, Odell, Houston, Chapman, Dr. Rendle, Prof. Church, Dr. Muller, Rev. Canon Ellacombe, and Rev. G. Henslow, Hon. Sec.

Peziza tuberosa.—Mr. HOLMES exhibited specimens of this fungus, consisting of funnel-shaped cups, of a bright brown colour on an elongated stalk, arising from an irregular black tuber-like sclerotium. The mycelium preceding the sclerotium stage is said to be parasitic on the Wood Anemone.

Virescent Primroses.—He also showed flowers with slightly abnormal calyx, but with a virescent corolla. There were no stamens, but the pistil was malformed, being open and terminating above with styliform processes. In one, a portion of the placenta was parietal, the free portion carried a minute tuft of a foliar nature at the summit.

Helix Soleirolii.—Mr. ODELL brought a specimen of this plant of the family Urticaceae. It is a native of Corsica, having very small leaves, and minute male and female flowers, somewhat resembling those of a Stinging Nettle. It is monoecious.

Schinus Mollis, diseased.—Dr. BONAVIA sent some leaves of this tree apparently diseased. Dr. M. C. COOKE undertook to examine them.

Carnation Leaves Injured.—Dr. WILLIAM G. SMITH reports on the specimen sent to him as follows:—"On March 13 you sent some Carnation leaves with diseased tips. After examination I find no signs of fungi. It appears to me that the disease is due either to water remaining on the tips after overhead watering, or to exudation of water at the tips. As only the ends of a few leaves were sent, no examination of the rest of the plant could be made. Useful suggestions on Carnation diseases—including, I think, this one—will be found in *Proceedings of the Scientific Committee*, June 19, 1900 (*Journal*, vol. xxv., p. 33), also a report of my own, April 18, 1899 (*Journal*, vol. xxxiii., p. 29). A paper, by Woods (pamphlet of U.S. America Department of Agriculture, referred to in *Gardeners' Chronicle*, July 28, 1900), which deals with a bacterial disease, would also furnish useful hints on treatment."

Oleander diseased.—Dr. W. J. RUSSELL sent some leaves growing on "fine and hitherto very healthy pink-flowered plants in a conservatory; but while the rest of the plant looks healthy, several of the branches are fading; the attack coming from a point close to the main stem." They were forwarded to Dr. William G. Smith for further examination.

Mistletoe at Oxford.—Mr. W. G. BAKER writes as follows with regard to this subject:—"With reference to the Mistletoe in the Botanic Gardens, I cannot find it recorded when it was first introduced. The following list contains all the trees upon which it grows here:—Vigorous: *Crataegus Oxyacantha*, C. O. var. *rosea*, *Ostrya vulgaris*, *Aesculus (Pavia) flava*, *Cladrastis tinctoria*, *Tilia vulgaris*, Apple-tree. Moderate: *Crataegus odoratissima*, *Acer monspessulanum*, *Juglans nigra*. Weakly: *Aesculus hippocastanum*, *Pyrus Aria*, *Salix alba*, *Fraxinus Ornus*. I have observed seeds germinate on the following trees, but have never got beyond that stage:—*Fraxinus pubescens*, *Diospyros virginiana*, *Pyrus intermedia*, *Cerasus serotina*, *Gymnocladus canadensis*, *Ailantus glandulosa*, *Corylus columnata*. Mr. BURBIDGE, who forwarded Mr.

Baker's communication from Oxford, adds:—"I have never seen it growing on the Beech or Viburnum, as stated in the *Gardeners' Chronicle*, p. 193, of March 23 last."

Hepatica triloba alba.—Herr A. M. C. VAN DER ELST, of the Royal Tottenham Nurseries, Dedemsvaart by Zwolle, Holland, sent a flower of this rare variety (see *Gardeners' Chronicle*, April 27, p. 262). Canon Ellacombe observed that it was known as an autumnal form of the double *Hepatica*.

Cattleya, deformed.—Mr. G. CRAGG, gardener, Percy Lodge, Winchmore Hill, sent a remarkable form of *C. intermedia*. There were four flowers on the spike, the two lower ones being perfect. The specimen sent was one of the two upper flowers, both of which were deformed. The flower sent had two coloured sepals, situated laterally, and two lips, one posterior, the other anterior, closely folded together. Within was a column without anthers.

Preparation of Wood.—An interesting paper was sent by Dr. Plowright, with numerous specimens, showing the production of the blue colour derived from this plant. After alluding to several ancient writers, who described the colour as blue, green, and black, Dr. Plowright could find no recent information as to how the colour was extracted; as, though *Isatis tinctoria* is cultivated round Wisbech, where the manufactory still exists, it is no longer grown for the dye, but for a fermentable substance which renders true indigo (*Indigofera* sp.), "fast." After experimenting he found how all the colours, blues, greens, and blacks, could be obtained. Full details, with chemical analysis, &c., will appear in the *Journal of the Royal Horticultural Society*. A vote of thanks to Dr. Plowright for his valuable paper was proposed by Mr. Holmes, seconded by Dr. Müller, and carried unanimously. Prof. Church remarked that Chinese indigo is said to be made from wood; the "balls" of pounded leaves being extremely like those made in India from the species of *Indigofera*. He observed, also, that different qualities occur at different stages of growth. He added, that the colouring matter is not only produced in the leaves in the chlorophyll cells, according to Dr. Plowright, but also in the seeds. These contain two colouring matters, the true indigo and erythrophyl, the ordinary red colour of flowers, &c. The ripe fruits of the wood plant sent by Dr. Plowright, were deeply stained naturally, of a dark violet colour.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

APRIL 4.—At the meeting held in the Coal Exchange, Manchester, on the above date, the following awards were made:—

FIRST-CLASS CERTIFICATES.

Dendrobium × *Sibyl* superbum, from T. Statter, Esq.
Dendrobium × *Snowflake*, from T. Statter, Esq.
Odontoglossum × *Loochristiense*, King of the Belgians, from Mrs. Briggs-Bury.
Odontoglossum crispum var. *Charlemagne*, from Mrs. Briggs-Bury.
Lycaste Skinneri var. *alba*, from S. Gratrix, Esq.
Dendrobium × *Luna*, from S. Gratrix, Esq.
Lælio-Cattleya × *callistoglossa* var. *magnifica*, from J. Leemann, Esq.
Odontoglossum × *Loochristiense*, from J. Leemann, Esq.
Cattleya Schroderae var. *alba*, from J. Leemann, Esq.
Dendrobium × *Staffordi*, from Mr. W. Holmes.
Dendrobium Dalhousienae, from Mr. W. Holmes.
Miltonia × *Bleuana* var. *grandiflora*, from A. Warburton, Esq.
Dendrobium nobile *Wrigleyana*, from O. O. Wrigley, Esq.
Dendrobium × *Apollo*, album, from O. O. Wrigley, Esq.

AWARDS OF MERIT.

Lælia Jozgheana, Robson's var., from Mr. John Robson.
Cattleya Trianae var. *Ida*, from Mr. John Robson.
Dendrobium nobile, High View var., from Mr. A. J. Keeling.
Odontoglossum × *Wilckeanum* superbum, from J. Leemann, Esq.
Cattleya Schroderae var. *reticulata*, from J. Leemann, Esq.
Lælia purpurata var. *Victoria*, from S. Gratrix, Esq.
Dendrobium × *Leechianum*, from E. O. Schneider, Esq.
Cypripedium × *giganteum*, from T. Statter, Esq.

MEDALS FOR GROUPS.

Silver-gilt to J. Leemann, Esq.
Silver-gilt to T. Statter, Esq.
Silver-gilt to O. O. Wrigley, Esq.
Silver to Mr. John Robson.
Silver to Mr. J. Cypher.

VOTES OF THANKS FOR GROUPS.

To Mrs. Briggs-Bury, Mr. A. J. Keeling, Messrs. Backhouse & Son, Ltd., and Mr. W. Holmes.

LINNEAN.

APRIL 18.—Prof. S. H. Vines, F.R.S., President, in the chair.

Mr. J. F. HARTING exhibited a large falcon which had been trapped at Hatfield Broad Oak, Essex, and which, from its great size, dark colour, and the absence of bars on the tail-feathers, was thought to be a male Norwegian gyrfalcon.

Mr. G. E. LODGE, who exhibited some specimens of gyrfalcons, was inclined to think that it was merely a large and dark variety of the peregrine.

Mr. HARTING exhibited and made remarks upon a mummified hawk from an Egyptian tomb, pointing out the difference between mummies made at Memphis, which are black, dry, and brittle, from the bitumen employed in the embalming process, and those from Thebes, which, like the specimen exhibited, are of a yellowish colour, more flexible, and were prepared with natron, or neutral carbonate of sodium, Na_2CO_3 , brought from the natron lakes in the Lybian desert.

Col. SWINHOE confirmed the statement that our word "mummy," Fr. *monie*, Sp. *monia*, was derived from the Arabic *mum*, wax, the most expensive process of embalming known to the Egyptians being that in which wax and bitumen were the chief ingredients.

Mr. CHARLES DAWSON, F.G.S., exhibited a hollow flint nodule which had been picked up on the downs at Lewes, and which on fracture was found to contain the desiccated body of a toad. The flint measured $5\frac{1}{2}$ inches in length and 12 inches in circumference, and a small hole at one end indicated the point of ingress for the toad, which must have entered in a very immature condition, and died there after having attained a size too great to permit of its escape.

In the discussion which followed, remarks were made by Mr. E. T. Newton, F.R.S., Mr. John Lewis, C.E., and others; the general opinion being that a modern toad had crept into an ancient flint, and, having lived for a time on such insects as found their way into the cavity, had died there.

Mr. S. PACE exhibited specimens of *Moseleya latistellata*, Quelch, the so-called "rugose coral," from Torres Strait. The specimens shown were obtained from the backs of pearl-shells collected in Friday Island passage, at a depth of 3 to 4 fathoms. In the opinion of Mr. Pace, they showed that the so-called coral was really a species of *Lithophyllia*.

Mr. W. B. HEMSLEY, F.R.S., exhibited the leaves and flowers of two new genera of Chinese trees—*Bretschneideria*, Hemsley (a new genus of *Sapindaceae*); *B. sinensis*, Hemsley. This is another of the many new generic types discovered by Dr. A. Henry in Western China. It is from the mountains of Szemao, in the province of Yunnan, in latitude 23° N., growing in forests at an elevation of 5000 feet. Dr. Henry describes it as a tree from 20 to 30 feet high, bearing pink and white flowers, which are about 2 inches in diameter, and arranged in terminal racemes a foot or more in length, and equalled by the pinnate leaves. Its botanical affinities are with the Horse-Chestnut (*Esculus*) and the North American Spanish Buckeye (*Ungnadia speciosa*), which is well figured in Sargent's *Silva*, ii., plate 73.

From *Esculus* the new genus differs in having pinnate leaves, racemose flowers, a broadly campanulate calyx, from the middle of which the petals spring, and no disc. The fruit is unknown. It agrees with *Ungnadia* in having pinnate leaves, and *Ungnadia* differs in having relatively small flowers in small fascicles along the young branches below the leaves with only four petals, the anterior (or fifth) being undeveloped; the ovary, too, is distinctly stalked.

The genus is named in honour of Dr. Emil Bretschneider, an eminent sinologist, who was for many years physician to the Russian Legation at Peking, and who has published many important works on the vegetable productions of China. His last work, entitled *A History of European Botanical Discoveries in China*, is a most elaborate and detailed compilation.

It remains to be proved whether this handsome tree, and the multitudinous other novelties discovered in the same district by Dr. A. Henry, Mr. W. Hancock, and others, will prove hardy in England.

Itoa, Hemsley, is a new genus of *Bixaceae*; *I. orientalis*, Hemsley (species unica), Hook. *fc. Pl.*, t. 2688.—This genus is allied to *Idesia*, Maxim (*Bot. Mag.*, t. 6794); *Poliathyrsus*, Oliver (Hook. *fc. Pl.*, t. 1889); and to *Carriera*, Franchet (*Revue Horticult.*, 1896, p. 498, fig. 170). These are all monotypic genera inhabiting China, *Idesia* also occurring in Japan.

Itoa differs from all of them in having opposite or sub-opposite leaves. From *Poliathyrsus* it differs in having absolutely unisexual flowers, a three or four-parted perianth, and numerous stamens. From *Carriera* it differs in the same characters, and in the seeds having a more or less circular or circumferential wing. From *Idesia* it differs in having valvate perianth-lobes, and a capsular fruit.

The name *Itoa* has been given in honour of the patriarchal Japanese botanist, Dr. Keisuke Ito, who recently died at the age of nearly 100 years; and of his grandson, Dr. Tokutaro Ito, who studied botany at Kew, and enriched the library by the gift of a number of Japanese books. *Itoa orientalis* is a native of Mengtze, Yunnan, Western China, and is one of Dr. Henry's numerous discoveries. It is a tree 20 feet, growing in the mountain forests at an elevation of about 5,000 feet.

Messrs. W. B. HEMSLEY, F.R.S., and H. H. PEARSON, F.L.S., communicated a paper on the Flora of Tibet, based on various collections of high-level plants received at the Kew Herbarium. The country dealt with was described as lying between 80° and 102° lat. and 28° and 29° long., and having an average altitude of 15,000 feet. Within this area, 360 species of vascular plants had been collected, and were referred to 144 genera and 46 natural orders. Almost all the orders represented were nearly of world-wide distribution, and none were really local. Of the 360 species, only thirty appeared to be peculiar to Tibet. In illustration of the paper, a selection of the plants was exhibited; most of them dwarf deep-rooted herbs, very few annual or monocarpic, and the only woody plant, *Ephedra Gerardiana*, was described as scarcely rising above the surface of the ground. The majority had been collected at altitudes varying between 15,000 and 18,000 feet.

Mr. C. B. CLARKE, F.R.S., F.L.S., in making some observations on the paper, pointed out that the name "Thibet," or "Tibet," was quite unknown to the people who dwell in the country so-called, and its precise boundaries were even now imperfectly defined. It was convenient, however, to retain a name by which it was known to so many European travellers, and their explorations and collections were making us better acquainted with the country every day.

MIDLAND DAFFODIL.

APRIL 25, 26.—Whatever Birmingham takes in hand in the way of flower shows success seems to crown its efforts, whether it be Daffodils or Carnations. Mr. Robert Sydenham and those associated with him appear to be able to get together displays both extensive and of high quality. This was particularly true of the third exhibition of this Society on the above date. The interest in the exhibition was enhanced by the presence of a deputation from the Royal Horticultural Society, which consisted of the Rev. W. Wilks, secretary, Miss Willmott, Mr. J. T. Bennett-Pe, the chairman of the Narcissus Committee of the Society; Mr. F. W. Burbidge, M.A., and the Hon. Boscawen. The foregoing, together with judges and experts, formed a Floral Committee, and dealt with the novelties staged while the work of arranging the show was proceeding, the advantage being that they had the flowers before them while they were quite fresh. In association was the annual exhibition of the Midland Section of the National Auricula Society, and a very good display was made. Mr. J. Douglas took down from Great Bookham some of his best plants, and won several of the leading prizes.

The exhibits were arranged as usual in the Show House of the Botanical Gardens, Mr. W. B. LATHAM's arrangements being all that could be desired. A considerable number of miscellaneous exhibits were staged, and the capacity of the place was tested to the very utmost.

Daffodils.—The leading class was for a collection of fifty varieties representing fairly the three main divisions into which they are divided, viz., *Magno-Coronati*, *Medio-Coronati*, and *Parvi-Coronati*. Here it may be stated that the dividing line between the two last-named is being rendered more and more difficult of definition, owing particularly to seedlings raised from crosses. Some new classification is becoming very necessary; and when set up it should be of such a character as to be readily grasped by lovers and cultivators of the flowers who do not rank as experts. The first prize was awarded as last year, to Mrs. R. O. BACKHOUSE, Sutton Court, Hereford, who had flowers characterised by fine quality, and included such leading varieties of the trumpet section as *Weardale Perfection*, *Horsfieldi*, *Glory of Leyden*, and *Madame Plomp*; the other sections represented by *Madge Matthew*, C. J. Backhouse, William Wilks, Stanley, Princess Mary, Gloria Mundi, Queen Sophia; the Rev. J. JACOB, Whitwell Rectory, Whitechurch, was 2nd; and Mr. F. A. WALTON, The Priory, Handsworth, 3rd.

The best twelve trumpet Daffodils came from Mr. J. DOUGLAS, Great Bookham, who had highly-developed blooms of *King Alfred*, very fine; *Glory of Leyden*, *Victoria*, *Weardale Perfection*, *Madame Plomp*, *Captain Nelson*, *Madame de Graaff*, *W. Goldring*, J. B. M. Camm, and three others; Mr. P. D. WILLIAMS, St. Keverne, St. Austell, was 2nd; and Messrs. J. POPE & SON, Nurserymen, Birmingham, 3rd; Pope's King, a large yellow trumpet, was in fine character.

With six varieties, Messrs. J. H. WHITE & SON, Daffodil growers, Spalding, were 1st, with very fine blooms of *Emperor*, *Madame Plomp*, *Victoria*, *Horsfieldi*, *Maximus*, and *Madame de Graaff*; Mr. W. B. LATHAM, Curator of the Botanical Gardens, was 2nd.

Medio-Coronati varieties.—With twelve bunches of these there was an excellent competition, Mr. P. D. WILLIAMS taking the 1st prize with *Queen Sophia*, *Sulphur Phoenix*, *Mrs. Langtry*, *Dorothy Wemyss*, *Floa Wilson*, *Maggie*, C. J. Backhouse, *Lulworth*, &c.; 2nd, Mr. H. B. YOUNG, Metheringham, Lincoln; and 3rd, Mr. J. DOUGLAS.

With six varieties, the Rev. G. F. EYRE, Far Forest Vicarage, Rock, Bewdley, was placed 1st.

It having been pointed out to the judges, after the awards were made in this class, that a collection from Messrs. J. T. WHITE & SON, Spalding, had been overlooked, a special 1st prize for extra merit was awarded to them. Mr. A. CRYER was 2nd.

Parvi-coronati Varieties.—With six varieties, Mr. P. D. WILLIAMS was 1st; chief among them, *Scarlet Runner*, *Hovee*, *Chaffinch*, *Red Beard*, *Cassandra*, and *Blood Orange*; 2nd, Mr. H. B. YOUNG, with *Ornatius*, *Almira*, *Vanessa*, *Poetartum*, *Baroness Heath*, and two others; 3rd, Miss F. W. CURRIE, Lismore, Ireland.

Next came a class for twelve varieties, none of which must cost more than 10s. per dozen, and here Mr. R. CHAPMAN CARTWRIGHT, Nelly Oak, was placed 1st, having in fine form *Sir Watkin*, *Ornatius*, *Emperor*, *Grandis*, *Horsfieldi*, *Golden Spur*, *Empress*, P. R. Barr, *Barri-Conspectus*, *Cynosure*, *Princess Figaro*, &c.; Mr. J. W. C. KENNINGTON, Monitron, near Spalding, was 2nd; and Mr. H. H. HARTBELL, Arden Vale, Olton, 3rd.

With six varieties shown under the same conditions, Mr. C. L. BRANSON, The gardens, Coleshill Park, was 1st; and Mr. J. SCORNEY, Harborne, 2nd.

Daffodils in pots.—These were shown in good character, and consisted in the main of the commoner forms. Mr. A.

CRAYER was 1st with twelve pots; and Mr. R. CHATWIN CARTWRIGHT with six pots.

Polyanthus Narcissus in six varieties were a good feature, Mr. CRAYER coming in 1st, with such varieties as The Maestro, new and fine; Mont Cenis, Jaune, Supreme, Grand Monarque, Grande Primo, and Gloriosus; Mr. R. C. CARTWRIGHT was a close 2nd.

TULIPS.

Early single Tulips were well done, Mr. CRAYER taking the 1st prize with the following in their best character, Keizer's Kroon, Unique, a distinct and pleasing variety; White Pottbakker; Queen of the Netherlands, a charming pale variety; Ophir d'Or, and Proserpine; Mr. R. C. CARTWRIGHT was again a close 2nd, and Mr. R. SYDENHAM 3rd.

MISCELLANEOUS.

Lily of the Valley, *Cyclamen persicum* (the 1st prize six from Mr. C. L. BRANSON were remarkably good), and *Lilium Hurisii* also exhibited.

There were some pretty table decorations; chief among them Miss SWINFEN's table, 6 by 3, which was light, elegant and in excellent taste, and won for her the 1st prize; and the Rev. J. JACOBS had 1st prize for a round table of spring flowers.

Bouquets of Daffodils were shown by Messrs. J. POPE & SON, and others. There were bowls filled with Daffodil blooms, and also Daffodils and *Polyanthus Narcissus* growing in bowls of cocoa-nut fibre refuse.

There was a class for a basket or box of cut bloom packed for market. Messrs. J. T. WHITE & SON were 1st, and Mr. J. W. CUNNINGTON, also a market grower of Spalding, 2nd.

NEW DAFFODILS.

Seedlings were numerous, and a strong committee of experts made the following awards:—Trumpet Section: First-class Certificates to King Alfred, a grand yellow self, shown by Mr. J. DOUGLAS; Earl Gray, a very fine bicolor, with a large straight trumpet like that of the Queen of Spain (Miss WILLMOTT); and General Roberts, shown in fine character by Messrs. BARR & SONS. The same award was also made to the following small-crowned varieties:—Gloria Mundi, having a large overlapping sulphur perianth and spreading orange cup (BARR & SONS); Sunrise, white perianth and orange cup, fine quality (Mrs. BACKHOUSE); Lucifer, regarded as a great acquisition, having a large open perianth of creamy white, and rich orange cup (BARR & SONS); and Robert Berkeley, a very fine white Sir Watkin (Miss WILLMOTT) (see fig. 101).

AWARDS OF MERIT

were made to Trumpet O. G. Giant Edge, a very fine bicolor, the perianth white, the trumpet soft yellow (Rev. C. WOLLEY-DON); Sunbeam, one of the Burbridge type, soft and very pleasing (Mrs. BACKHOUSE); Maggie May, another white; Sir Watkin, of an attractive character (BARR & SONS); Charles Wolley Dod, which was awarded a Special Certificate last year (Miss WILLMOTT) (see fig. 101); and to a large double primrose-colored *Incomparabilis*, originally named John Walker, but to be known in the future as *Primrose Phoenix* (JOHN WALKER).

Mr. DOUGLAS's King Alfred was selected as the premier trumpet in the show; and Almira, shown by Mr. H. B. YOUNG, as the premier small crowned; it is regarded as a considerable improvement on poeticus ornatus, being faultless in shape.

NON-COMPETITIVE EXHIBITS

were numerous, and Medals were awarded both by the Local Society and also by the Royal Horticultural Society.

Messrs. BARR & SONS had a large representative collection containing many novelties.

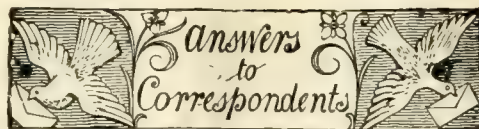
Miss F. CURREY brought from Lismore, a collection characterised by very fine finish, showing the adaptability of Irish soil to bring this popular flower to a high degree of quality.

Messrs. J. T. WHITE & SON, Spalding, had a collection of Lincolnshire-grown Daffodils of the highest merit; Messrs. R. H. BATE, Ltd., Wisbech, also had a good representative collection; and the same came from Messrs. DICKSONS, Ltd., Chester, a district eminently favourable to finish in the flower; Messrs. HOGG & ROBERTSON, Dublin, had one of their collections of Irish-grown Tulips in splendid character, and Daffodils also; Mr. R. SYDENHAM had early single Tulips in pots, also Daffodils, and the latter grown in bowls of Cocoa-fibre; Messrs. J. R. PEARSON & SONS, Lowham, had a group of cut Daffodils showing superb quality; Mr. F. A. WALTON also had a collection of Narcissi; Messrs. WALLACE & CO, Colchester, one of those unique collections of spring flowering plants this firm is in the habit of setting up; Messrs. HEWITT & CO., Solihull, had elaborate floral decorations; Messrs. GUNN & SONS, Olton, cut flowers with Daffodils; Mr. T. S. WARE, Ltd., Feltham, a good collection of Daffodils, species of Primulas, &c.; Mr. LEONARD BROWN, Brentwood, a small but select collection of well-grown Daffodils, set upon an ingenious frame he has constructed for their exhibition; and Mr. P. D. WILLIAMS, a small collection of seedling forms of poeticus.

GARDENING APPOINTMENTS.

MR. ERNEST CRITCHLEY, for the past three years Foreman in the gardens at Wistow Hall, Leicester, as Head Gardener to the Duchess of HAMILTON, Upper Hall, Ledbury.

MR. H. TAYLOR, for upwards of eleven years Head Gardener at Tredington, Whitechurch, Salop, as Head Gardener to Lord HATHERTON, Teddesley Park, Penkridge, Staffs.



BEAN AND PEA WEEVILS: *Essex*. The weevils are specimens of the striped Pea-weevil, *Sitona lineata*. These insects feed by day, and hide under clod and rubbish at night. The best means of defence against their attacks is the encouragement of growth in the plants, and to use some kind of wash that is distasteful to the beetles—as lime and soot applied to the plants whilst wet with rain or dew; syringing with soapy-water, or Quassia-water with a little soap in it to give adhesiveness. The land should be dressed with gas-lime in the winter, and trenched, the top shovellings of a thickness of 2 inches, containing the eggs, being buried at the bottom of the trenches, or charred.

BLUE PRIMROSE: *M. Cooper*. It was blue as Primroses go. It was an umbellate Primrose.

CORRECTION: The "Orchid Houses" in the *Gardeners' Chronicle*, April 27. We regret that through a clerical error the word "Vandas" was inserted several times in the place of *Phalaenopsis*, which the writer intended.

FLORISTS' GUM: *New Subscriber*. Pound shellac to a fine powder, place in an earthenware jar, and mix it with spirits of wine; place near the fire, or in a warm-water bath, shaking the jar occasionally till the shellac is dissolved. Apply it with a camel's-hair pencil, which should be kept in the mixture.

GARDENIAS GOING OFF AT THE GROUND-LEVEL: *S. J.* Before forming an opinion as to the cause of the mishap, we should like to inspect a plant, and the soil in which it grew.

GRAFTING WAX: *H. H.* First melt 2 lb. 12 oz. of resin, and Burgundy pitch 1 lb. 11 oz., in a glue-pot, then melt 9 oz. of suet or tallow in another vessel, and when all is melted pour together and mix well, adding 18 oz. of red ochre in small quantities at a time. The preparation should be used in a slightly warm condition. When using it in considerable quantities it should be kept warm with a spirit-lamp. Apply with a brush, or bit of rag fixed on a stick. If found to be too sticky for use, add a little more tallow. Quite a thin coating is all that is needed.

GRAPES SPOTTED: *T. Powell*. The berries are affected with the spot disease, caused by a fungus, *Glæosporium laticolor*, often mentioned in these pages. Cut out all affected berries, and dress the Vines and bunches with sulphide of potassium at the rate of ½ oz. in a gallon of water.

INSECTS: *H. O. E.* The larvae in your Holly-leaves are those of *Phytomyza ilicis*, and they are very destructive. Miss Ormerod's books are published by Simpkin, Marshall, Hamilton, Kent & Co., Stationers' Hall Court, London, E.C.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number*.—*E. D., Brussels*. *Odontoglossum* × *elegans*, a natural hybrid of *O. cirrhosum*; 2 and 3, *Odontoglossum* × *Andersonianum*, of the *Hebraicum* section; 4 and 5, *Odontoglossum* × *Andersonianum* varieties, with few spots; 2, 3, 4, and 5, with others, come under *O. lanceans*, Reich. f. botanically; 6, *Odontoglossum triumphans*; 7, *Odontoglossum luteo-purpureum*; 8, *Odontoglossum odoratum*; 9, *Vanda tricolor*; 10, *Odontoglossum luteo-purpureum*. The flowers were dried up on arrival, and 1 and 8 require verification.

H. G. A. *Abies nobilis*.—*J. G.* *Amelanchier vulgaris*, *Forsythia suspensa*, *Spiræa prunifolia* fl. plen., *Muscari botryoides*, *Leucoium vernum*, *Milla uniflora*.—*E. E.* *A. Strobilanthes Dyerianus*.—*J. T.* 1, *Odontoglossum blandum*; 2, *Vanda tricolor*; 3, *Vanda suavis*; 4, *Bifrenaria Harrisonæ*; 5, *Odontoglossum triumphans*; 6, *Dendrobium primulinum*.—*W. T., Harrogate*. 1, *Odontoglossum Wilckeanum*; 2, *Odontoglossum Ruckerianum*; 3, *Odontoglossum gloriosum*; all good, and distinct.—*W. D., Mon.* *Dendrobium primulinum*.—*Fell.* 1, *Vanda tricolor*, near to the variety *Patersoni*; 2, *Oncidium sphacelatum*; 3, *Oncidium altissimum*.—*R. N. H.* *Lycaste Denningiana*, *Odontoglossum gloriosum*, and *Dendrobium fimbriatum oculatum*.—*Dillon Hill.* 1, *Cattleya Schroderæ*; 2, *Cattleya inter-*

media; 3, *Cyperus latus variegatus*; 4, *Oncidium sarcodes*; 5, *Cattleya Skinneri*; 6, *Cattleya Lawrenceana*.—*R. R., Morecambe*. *Odontoglossum Adriane*.—*D. H.* 1, not found; 2 and 3, *Amelanchier canadensis*; 4, an *Acer*, probably *A. Schwedleri*; but the leaves are not expanded.—*Alpine.* 1, *Fritillaria meleagris*, white var.; 2, *Vicia Orobus*; 3, *Adonis vernalis*; 4, *Dielytra formosa*; 5, *Anemone hortensis*; 6, *Morisia hypogæa*; 7, *Sanguinaria canadensis*.—*J. T.* We cannot undertake to name varieties of Daffodils. —*I. E.* *Stauntonia latifolia* and *Eucalyptus resinifera*.

PEACH-LEAVES: *J. F., Grim's Dyke*. Your Peach is affected with the silver-leaf disease, the cause of which is still mysterious. Cut away the affected shoots—feed the tree liberally—see that no stagnant moisture accumulates. We fear, however, that not much can be done.

POLYANTHUS BEING DESTROYED: *A. M.* The loss of plants is caused by the larvæ of a weevil. We did not find the perfect insect, only the larvæ, so cannot say which species it is. Nothing short of instant removal, careful search for the grubs, and transplantation to a new site, at a distance from the old one, will save the plants. Do not make use of pasture loam about the roots.

POTATO-ONIONS: *Grip*. The bulbs are put into the earth to half their depth; when put deeper than this, they make thick necks, grow continuously, and run to seed, never ripening. They require a space of 4 to 5 inches in the rows, and 7 inches between the latter. The proper planting season is March.

RHUBARB INFLORESCENCE: *Wykeham*. In the case of newly-planted stools, flower-spikes should be removed at the ground-level as soon as they make their appearance, and these should not be left on established plants if seed be not wanted.

STAG-BEETLE (*LUCANUS CERVUS*): *J. Wynne*. The beetles pass the day on the trunks of trees, and live upon the sap (all stag-beetles are herbivorous), for procuring which the brushes of their jaws and lips seem to be designed. They lay their eggs in crevices of the bark of trees, especially near the roots. The grubs are said to be six years in coming to their growth, living all this time in the trunks and roots of trees, boring into the solid wood, and causing considerable injury. When they have arrived at their full size, they become enclosed in egg-shaped pods, consisting of gnawed particles of wood and bark, stuck together and lined with a kind of glue. Within these they become transformed to pupæ, having the body and all the limbs incased in a whitish film, which being thrown off in due time the insects appear in the beetle form and burst the walls, and crawl through the holes the larvæ had gnawed. *Treasury of Natural History*.

VINE LEAVES DISFIGURED: *C. A. B.* The leaves are weak and thin from excess of moisture in the air and too little ventilation, and the yellowing is due to scalding from sunshine. Afford more air, or, at any rate, at an earlier hour; keep theinery less close, and if the yellowing of the leaves does not then cease, spread a fish-net, single, over the parts of the roof where the leaves are affected. There is no disease, but your practice last year was just the same as this year, hence the similarity of the mishap.

VINES 100 YEARS OLD: *P. M. G.* Almost useless roots, the result of old age, and the soured, exhausted state of the Vine-border. Renovation is impossible when Vines have got into the conditions shown by the sample of roots sent.

COMMUNICATIONS RECEIVED.—*W. D'S.*—De Styrap—*W. B. H.*—*W. M.*—Max Leichtlin—*W. Gostling*—*J. O'B.*—*H. T. M.*—*J. J. W.*—*E. C.*—*A. O'N.*—*A. J. L.*—*D. R.*—*A. D.*—*J. H.*—*F. J. H.*—*C. G.*—*T. C.*—*J. C.*—*D. R. W.*—*A. C. B.*—*Messrs. Wills & Segar*—*Wm. Friend*—*C. B. C.*—*A. H. K.*—*H. J. W.*—*P. W.*—*G.*, *Altrincham*.

PHOTOGRAPHS, SPECIMENS, ETC., RECEIVED WITH THANKS.—*K. B. W.*

DIED.—On the 27th inst., at Tan-y-cwm, Penmaenmawr, N. Wales, MARY, daughter of the late N. B. WARD, F.R.S., F.L.S.

—We regret to announce the death, on April 27, at his residence, of Mr. JOHN THOMSON, of the firm of W. Thomson & Sons, Ltd, Tweed Vineyards, Clovenfords, N.B.

(Remainder of Markets carried forward to p. xi.)



VIEW IN THE BOTANIC GARDEN, MALTA.

THE

Gardeners' Chronicle

No. 750.—SATURDAY, MAY 11, 1901.

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THOSE WHOM HORTICULTURE HONOURS.

SIR GEORGE KING.

SIR GEORGE KING, K.C.I.E., M.B., LL.D., F.R.S., joined the Army Medical Service in 1865. In 1866 he was house-surgeon in the Calcutta Medical College Hospital. His preference for natural history soon carried him to the Saharanpore Botanic Garden—the botanic headquarters of the north-west. Thence he made tours which included Rajputana and the Central Provinces; and acquired a field knowledge of the plants and the birds of that region. In 1871, on the death of Dr. Thos. Anderson, superintendent of the Calcutta Botanic Garden, and the Sikkim Cinchona plantations, King was appointed to succeed him.

The Calcutta Botanic Garden came into King's hands in an uninviting state: it had been swept by the cyclone of 1864, and replanted with young trees and shrubs by Dr. T. Anderson. The number of trees which can make a start on open grass at Calcutta is small. A few Orchids only (among them however some very fine ones, as *Vanda teres* and *V. Roxburghii*) will grow in the open at Calcutta; but John Scott had found that many more would flourish in a Pepper-garden built in the native way, with an open roof of bamboo strips which broke the direct force of the sun's rays, and kept the interior in a steaming heat.

King developed these Pepper-gardens; he built them in general form resembling English green-houses, the roofs of wire. In these, many species of Orchids flourished, and, by degrees, a great variety of fine plants from the mountain jungles were added, till the Pepper-gardens have become a principal feature of the Calcutta Garden.

The Palms in the garden had been few in species though numerous in individuals; long winding

rows of *Oreodoxa*, and large clumps of *Picea* there were. King added a very lofty Pepper-garden roof, supported on cast-iron pillars, under which some of the finest Malayan (and other) Palms are grown.

King made many miles of wide driving-road in the gardens, and placed occasional avenues of the common Palms by their side; he improved the tanks into picturesque lakes; he built a herbarium imitated from the Kew herbarium, but with the very considerable improvement that it is built of iron and brick.

All this progress required money; and Sir Geo. King was most successful in commanding the confidence of the Bengal Government from the commencement of his directorship.

The Darjeeling Cinchona plantations came into King's hands at the crisis of their fortunes. The crown bark was dying out—it was gone. The red and the yellow bark were very unhealthy, the leading shoot extensively damping-off. The difficulties of manufacture were just come upon the plantation. King got the Government to give him



SIR GEORGE KING.

(Late Director of the Royal Botanic Garden, Calcutta.)

in Mr. Wood, not merely a chemist, but an experienced quinine-maker. As to the disease, King early attained the idea that it might be possible to grow Cinchona so as to get a weight of bark for manufacture without growing the shrub successfully as arboriculture. This idea he has effectuated; the Sikkim Cinchona plantations are, as a whole, very poor-looking ragged stuff, but the bark is got. The result is, that the disulphate of quinine which cost Government (in half-ton indents) 15s. an ounce when King began, now costs Government nominally 1s. 4d. an ounce—really hardly anything, for where the Cinchona-trees stand well they are preserved, the rough, quill, and root-bark being taken first for manufacture.

Dr. T. Anderson had been Conservator of Forests in Bengal, in addition to his garden and Cinchona work; but this post was not given King. A Conservator of Forests is so occupied with prosecuting natives for trespass of animals, tapping of rubber, and other depredations, and official struggles with the Collector and Commissioner, that botanic knowledge of trees has become of secondary importance to him. Sir Geo. King dealt with this subject in his presidential address to the Botanic Section of the British Association at Dover, when he was followed by Sir J. D. Hooker.

During Sir George King's tenure of the Botanic Garden no improvements in, and no attempts to

improve, the native methods of agriculture in Bengal was made. The Agricultural Department, on receiving a good quantity of fine seed, would divide it into twenty bags, and send one bag to each of twenty collectors. The Collector of Bogley Wallah would send his bag to an old Muhammadan at Muggra Hat to do what he could with. In due course the Agricultural Head of Department would report that the seed received had been extensively tried in Bengal, and found not adapted to the soil and climate. Of all such business King would hear nothing; he escaped both the responsibility and the worry of agricultural experiment on behalf of Government.

Sir Geo. King, on taking charge at Calcutta, carefully designed his career in botanic publication. He did not hurry his work, with the result that, in spite of the difficulties which attend the preparation of plates in Bengal, the quantity no less than the merit of his published work is extraordinary. He also determined from the first, to apply his strength mainly to the elucidation of those great Natural Orders of trees, which are of the highest economic interest, though also the most difficult to treat systematically. In his series of illustrated quartos of large Natural Orders of India and South-east Asia, King has monographed the Figs, the Magnolias, the Nutmegs, the Oaks, the Bread fruits, and the Custard-Apples. To these he has added the Sikkim Orchids, perhaps as a relief or variety in work. On the same ground, viz., the great number and importance of the trees and shrubs, King selected as his *Flora* the Malay Peninsula, which he has now half completed. The proportion of trees here brought to light and described botanically for the first time is unparalleled. It is quite true that in the attainment of so great results, in administration and in publication, King had most material aid from subordinates (he would call them colleagues), such as Prain, Gamble, Pantling, and others. But it is only a good chief who gets such men as subordinates, or gets such work out of them.

Sir J. D. Hooker's *Flora of British India* is an account of the Indian dried plants in the Kew herbarium; in parts, especially the latter volumes worked up by Sir J. D. Hooker himself, it is a great deal more than this. On its completion, it was determined, starting from Hooker's *Flora* as a base, to prosecute local explorations, especially of the areas of India imperfectly collected in by botanists, as a preliminary to the preparation of separate *Floras* for the local governments. King was accordingly, in 1891, appointed Director of the Botanic Survey of India—an Imperial appointment. He threw himself with ardour into this work; by training natives, who could travel on low pay, to collect, he succeeded, at small cost to Government, in getting together large quantities of material from such areas as Upper Burmah, Eastern Himalaya, Perak, so that several of the local *Floras* are already in hand. The *Flora of Ceylon*, by Dr. Trimen and Sir J. D. Hooker, is published (complete).

In the latter part of Sir G. King's service, Sir Edward Buck, whose capacity in grading and in administering encouragement in homeopathic doses of increments has never been disputed, conceived the idea of fusing all the scientific services—botany, astronomy, zoology, meteorology, palæontology, bacteriology, geology, statistics, geodxy, ethnography, telegraphy, and archaeology. Of this grand department King was destined by Buck to be the first head. A difficulty unforeseen by Buck arose; King modestly but firmly declared that he did not feel himself competent to administrate the harmonious whole, and the idea fell through, to the serious annoyance of Sir E. Buck. This was, however, the solitary instance in which Sir George King disappointed his official superiors. On his retirement, Government recognised his services—he became the first botanic Knight of India.

On May 24th, the anniversary of the birth of Linnæus, Sir George King is to receive the Medal given by the Linnean Society annually to a botanist or a zoologist alternately.

MR. GEORGE NORMAN.

ONE of the recipients of the Victorian Medal of Honour is gardener to the Marquis of Salisbury at Hatfield House, which onerous situation he has filled with much credit to himself since 1876. Mr. Norman is a Bedfordshire man, and entered the gardens of the late Mr. Magniac, of Colworth House, in that county, at any early age, and remained there for seven years, gleaned much knowledge of out-of-doors gardening as practised in those extensive gardens. Thence he removed to Baron Schroder's gardens, at The Dell, Egham, in the winter of 1869, and four months later he was promoted to be foreman under Mr. Ballantine. His stay at The Dell lasted till 1872, and then, after a brief interval spent in the Royal Exotic Nurseries, Chelsea, he was sent by Messrs. Veitch to the Duke of Sutherland's gardens, Trentham, Stoke-upon-Trent, Mr. Z. Stevens being then in charge of them. At Trentham he filled the post of foreman of the fruit department under glass. In 1873 he returned to Chelsea, and after a short time spent in the nursery, he went as general foreman to



MR. GEORGE NORMAN.

Linton Park, Maidstone, where he remained till 1876, when he obtained the head gardener's post at Hatfield.

The subject of our note has had, as will be seen, a varied experience in large establishments which has stood him in good stead in his present situation. Hatfield has extensive kitchen gardens; much fruit is grown on bush-shaped and dwarf-standard trees, and on the high walls surrounding the gardens, and in the numerous vineries, Peach-houses, Strawberry-houses and pits, which are taxed to their utmost capacity, more especially during the "season." When we are told that at certain dinner parties, forced Strawberries to the amount of fifty to sixty pounds weight are required, and that Peaches and Nectarines are supplied in proportion, we can understand the great scale on which not alone fruit, but every kind of product is cultivated in those gardens. For a gardener to visit Hatfield and not inspect the house department is to miss a great treat, for beyond the fact of the enormous quantities of fruit produced in the houses, and the general good cultivation to be noted, there are several objects that are in their way quite remarkable. For example,

Royal George Peach-tree, grown on the extension method, covers a roof space of 10 feet by 50 feet or hereabouts, and carries every year from 300 to 400



MR. JAMES SWEET.

fruits, without being in any way impaired in vigour. In another house a Lord Napier Nectarine, whose branches are trained equidistant horizontally, the young shoots being tied-in to the branches pretty closely, bears 300 fruits annually. It measures 36 ft. x 11 ft. The Brown Turkey Fig-trees in this house were heavily loaded with fruits, unripe, but of good size in spite of their numbers.

The Vines in the various vineries are a thriving lot, affording good promise for the current year. It is seldom that more than one variety is grown in one house. Of course, we expect to find Black Hamburg and Foster's Seedling in one vinery, also Black Hamburg and Madresfield Court, and Gros Colmar and Muscat of Alexandria, but the majority of the varieties grown have a vinery to themselves. The earliest crop of Hamburgs are now colouring fast, and will be fit for consumption in a fortnight; and as the Grape room still contains a number of very well preserved bunches of Lady Downe's Seedling, Mr. Norman will be enabled to supply his employer's table with old and new Grapes at one and the same time. The Strawberry-houses are filled with many hundreds of plants of Royal Sovereign, with fruit in different stages of development. Of the other features of the gardens we may be able to refer on some future occasion.



MR. WILLIAM BRADBURY LATHAM.

MISS ORMEROD, LL.D.

THE services to agriculture and horticulture rendered by this lady are too widely known and appreciated to demand lengthened notice. Devoting herself for many years to the study of economic entomology, she has been the go-between between the men of science and the practical cultivator, and has been the means of diffusing a vast amount of useful knowledge among a class not easily reached nor well-fitted to appreciate purely scientific research. Miss Ormerod was for many years the Consulting Entomologist to the Royal Agricultural Society.

MR. JAMES SWEET.

A MARKET NURSERYMAN.

In all the instances there have yet been of the award of the Victoria Medal of Honour, we doubt if there has been one in which the person selected for the honour had less expected such a distinction than did Mr. Sweet. Yet he is an excellent representative of the great industry that has been described



MR. R. IRWIN LYNCH

as "Market Gardening under glass," and has done a considerable work in its development. It is true that Mr. Sweet is not the largest of such "growers" at the present time, but it is equally true that he was in the front line of workers when many of those best known to-day were at school, and some of them have been Mr. Sweet's apprentices.

Though born in London, Mr. Sweet's early childhood was spent in a gardener's cottage in the suburbs, and there he appears to have acquired a love for plants, that has increased ever since. Returning to London for his schooling, he used to look up at the trees at Hampstead Heath, and feel that if he could not become associated with Nature in a more or less intimate manner, he would not succeed at anything.

Fortunately, young Sweet had a sensible and a good father, who was anxious to obtain for his boy the calling that most appealed to his nature. Accordingly, a visit was paid to the late Mr. Geo. Glenny, of Fulham, who had a wide reputation as a judge of florists' and other flowers; but his establishment proved to be a very small one, and he asked a premium exceedingly high. Young Sweet had sufficient tact at that early age to know that the place did not afford scope for obtaining



FIG. 111.—*BERBERIS CONGESTIFLORA* VAR. *HAKEOIDES* (CAT):
HARDY SHRUB; FLOWERS YELLOW. (REAL SIZE.)

(SEE P. 297.)

the experience he wished to acquire, and looking further afield, at last heard of Mr. P. Kay's nursery at Finchley, where he was apprenticed for four years, during which time he gained considerable knowledge of the cultivation of Grapes and flowers. Further experience was gained under Mr. Geo. Tillyard, well known at the time as gardener to Sir John Kelk, Priory Gardens, Stanmore. At the age of 21, he had decided that his choice was in favour of a business rather than of a private gardener's calling; but at the outset the way seemed beset with difficulties, and Mr. Sweet began to feel that he would be unable, with the moderate capital he could command, to obtain a footing in the nursery business. At last he succeeded, and after passing about a year at Forest Gate, where he worked up a small stock of plants, he removed to Leyton about the year 1863, and commenced to work with all the zeal of an enthusiast, for he has always had, and still possesses, a love for plant-cultivation. Mr. Sweet was very happy at Leyton, and prosperous withal, and therefore it was very reluctantly that, after twenty-three years, he left that place, and bought the 30 acres at Whetstone where his present nursery is situated. His removal to the higher position at Whetstone was necessary for the sake of his health, which began to show traces of enfeeblement, and on account, also, of the increase of smoke at Leyton. He had to leave many friends at Leyton, including the late Mr. John Fraser and the members of the District Council.

During the time Mr. Sweet has been at Whetstone he has built a few extra plant or fruit-houses each season, and is still doing so. We shall take an early opportunity of describing the nursery in question.

In 1888, Mr. Sweet won a silver cup offered by the Duke of Bedford at the Temple Show for a collection of plants shown by a market-nurseryman, and having won it in open competition, values it more possibly than he will the V.M.H.

Mr. Sweet has always taken an active interest in the Gardeners' Royal Benevolent Institution, and it was due to his suggestion that a Hailstorm Insurance Corporation was instituted a few years ago by nurserymen, with a view to providing an insurance against damage from hail at a premium of 10 per cent. instead of more than double that amount previously charged by other companies. Mr. Sweet would probably be the last to claim any credit for this corporation, which, through the exertion of Mr. Monro and others, has been so successful, but the idea was his. He is also a member of the Fruit Growers' Association (not British), which, through Mr. Geo. Monro, has sought and is seeking to ensure for the public the benefit arising from the great production of choice fruits, by combating that suicidal policy of the retailer, which causes him to seek an absurdly high profit upon his goods, and thus limit the sale of them, and prevent people of moderate means from enjoying what is exceedingly healthful, and what should be theirs. The Association, too, has encouraged grocers to sell such fruits, and in seeking a larger output for them has also commenced to export Grapes to America. All this work is undoubtedly good work, and Mr. Sweet, who takes an active part in all of it, need have no hesitation in accepting the Medal the Council of the Royal Horticultural Society has conferred upon him. P.

THE VEITCH MEMORIAL MEDALLISTS. MR. RICHARD IRWIN LYNCH.

MR. RICHARD IRWIN LYNCH gained his earliest horticultural experience in the garden of the Earl of St. Germans, at Port Eliot, in Cornwall, which he entered for the purpose of becoming eligible for Kew, whither he removed in 1867. At Kew he was first placed in the economic-house, but was soon afterwards advanced to the propagating pits of the tropical department, where he remained for two years. His health becoming impaired by the high temperature in which he had to work, he was removed to the temperate-house, and subsequently became foreman of the herbaceous department, including the exchange department, and he also had charge of the collections in the T range (Orchids excepted),

and of the collection of Cacti and succulents, work enough for two men as the departments were then arranged, but after a time he was relieved of the charge of the herbaceous department. During the eight years he had charge of these departments, he had much to do with the propagation and dispatch of important economic plants to British settlements in distant parts of the world.

In 1879 he was appointed Curator of the Botanic Garden at Cambridge, of which he has had the sole charge ever since. From the very first he was indefatigable in increasing the collections cultivated in the garden to such an extent, that after twelve years (1891) a fourth of all the genera in Bentham and Hooker's *Genera Plantarum* was represented there. He was one of the first to form a collection of hardy Bamboos, which soon became a feature of the garden. He designed the new plant-houses in which a very wide range of subjects is cultivated, many of them of especial interest, from which materials for figuring and description in the *Botanical Magazine* have been from time to time supplied, and in which Sir Joseph Hooker has on more than one occasion expressed his high appreciation of the work carried on by Mr. Lynch at Cambridge. He has also enriched our gardens with some beautiful plants, which he has obtained by selection or by hybridisation. One of the earliest was *Campanula isophylla alba*, which was raised by him at Kew; and latterly, the fine strain of hybrid *Cinerarias* raised at Cambridge, of which he himself has given a full account in the Hybrid Conference Report of the Royal Horticultural Society.

Mr. Lynch has been a liberal contributor to the horticultural press for upwards of thirty years; he commenced early at Kew with a weekly, sometimes fortnightly, article in the *Journal of Horticulture*, and about the same time he began to send communications to the *Gardeners' Chronicle*. He has occasionally contributed articles to *The Garden*. In 1886 he translated Correvon's *Les Plantes des Alpes* for the *Gardeners' Magazine*; and subsequently wrote on tropical aquatics, and the Bog Garden for *Popular Gardening*. He has contributed a new classification of the genus *Paeonia* to the *Journal of the Royal Horticultural Society*, and also several papers to the *Journal of the Linnean Society*, of which he became an Associate in 1881. He is a member of the Scientific Committee of the Royal Horticultural Society, a corresponding member of the Imperial Horticultural Society of Russia, and an Associate of the Botanical Society of St. Petersburg.

W. B. LATHAM.

AMONG the gardeners who have been the recipients of the Veitchian Medal, there is none who has more deservedly won the esteem of his fellows than the Curator of the Botanic Gardens, Birmingham. A few weeks since he contributed to the *Garden* an interesting account of his career, which we here reproduce, as it formed the basis for the remarks made by Sir Trevor Lawrence in presenting Mr. Latham with one of the medals.

"At an early period of my life I commenced work in the garden of Mr. William McNeil, Wandsworth Common. Mrs. McNeil was a great lover of gardening, with a good knowledge of hardy herbaceous plants, and cultivated a choice collection of them. I left here after 3½ years' service, and was then apprenticed to the late Mr. Robert Neal, of the old Wandsworth Common nurseries, which at that time contained a large collection of hardy trees, shrubs, Roses, herbaceous, and alpine plants. I remained here a little over three years, during which time I took up the study of British plants. With an old schoolfellow, the late Mr. C. Wilford, I often took long rambles, and together we collected a large number of plants found in that part of Surrey. With a desire for change, and a wider field for improvement, I went to Kew, and saw Mr. J. Smith, the then curator of the Royal Gardens, and some two or three months after I succeeded in obtaining employment there. I left Kew, then under the direction of the late Sir W. Hooker, in 1857. I had a great desire to study under the late Sir Joseph Paxton, then at Chatsworth, and soon succeeded in obtaining a situation in the gardens there. At Chatsworth I found a large collection of Orchids, embracing noble specimens of *Phaenopsis*, *Dendrobium*, grand masses of *Celebrata cristata* on blocks of wood, *Cattleyas*, *Saccolabiums*, *Acerides*, *Pleione*, and many others. There was a fine plant of *Amberstia nobilis*, and the *Victoria Regia* was in the highest state of perfection. The noble conservatory, with its wonderful collection of rare, tropical, and sub-tropical plants, excited my admiration. Outside the gardens and grounds of Chatsworth, I found on the hills and in the dales of Derbyshire ample occupation for the study of British plants, and added to my collection many not previously met with.

"Having a wish for experience in continental horticulture, I mentioned the subject to Sir Joseph Paxton, who readily consented to write to Professor Decaisne, then Director of the Jardin des Plantes, Paris, and some few months after, Sir Joseph received an intimation from the Professor that there was an opening, and that I could go at once to Paris. A few days after I was at the Jardin des Plantes with a letter of introduction from Sir Joseph to M. Neumann, the then Curator, who at once placed me under the direction of the late M. Houlet, whose courtesy and kindness is to this day gratefully remembered. At this establishment a large collection of plants was cultivated, both out-of-doors and under glass. I saw here for the first time *Lapageria alba* (then the only plant in Europe); I also saw *Paulownia imperialis* in flower for the first time. I was also very interested in the large collection of grasses grown here. Many facilities were given

to young gardeners to attend lectures and to visit the large Peach and Nectarine growing establishments out-side Paris, where, by the payment of one franc each, the *chef des cultures* gave them instructions in pruning, training, &c. I remained some months at the Jardin des Plantes, during which time I visited some of the best gardens and nurseries for miles round Paris. On returning to London I obtained employment in Messrs. Parker & Williams' nurseries at Holloway, and after six months in the plant department went as head gardener to Lieutenant-Colonel Perkins, Birtley Hall, Chester-le-Street, Durham, where I remained eight years, having charge of one of the finest collections of Orchids in the North of England, and a large collection of exotic Ferns, greenhouse and stove plants.

"On the retirement in December, 1867, of Mr. Catlin, curator of the Birmingham Botanical and Horticultural Society's garden, I was selected from about 200 candidates to succeed him. At this time the collection of plants was somewhat limited for a good botanical garden which had existed for thirty-seven years, and of trees and shrubs there were the remains of a fine collection, planted when the gardens were first made. For the formation of a large archery ground I received instructions from the committee of the garden to destroy one of the best, if not the best, collections of *Crataegus* and other Rosaceous trees and shrubs in the United Kingdom. The collection of plants was quickly increased. The glass accommodation was added to by the erection of two houses for the culture of plants, and subsequently the large, handsome conservatory was built. The absolute necessity for still further glass structures led to a special appeal for additional funds, and in a short time nearly £4000 were received. In July, 1885 a large portion of the old structure was pulled down, and an extensive block of new glass-houses built.

"We have now in the Botanic Gardens, Birmingham, a large collection of Orchids, a good collection of stove and greenhouse plants, including some fine specimens of *Camellias*, a large collection of Ferns, some good samples of Tree Ferns, and a good collection of herbaceous and alpine plants. A large rock garden was made and planted about six years ago, and is now a most interesting feature in the gardens throughout the year.

"In 1862 I raised *Dicksonia Lathamiana*, Moore, a hybrid between the *St. Helena* *D. arborescens* and the Australian *D. antarctica*; the original plant is now a grand specimen. The late Mr. T. Moore, on examining specimens of this hybrid, told me he had not up to that time thought much of hybrid Ferns, but he now must change his opinion. I have since raised seedlings from this Fern. Another hybrid Tree Fern raised by me about 1870 is between the Mexican *Cyathea insignis* and the Norfolk Island *Alsophila excelsa*. I have not been able to raise this hybrid from spores. The original is now a splendid plant. *Gymnogramma Lathamiae*, Moore, is another hybrid raised by me some twenty years ago, and is between *Gymnogramma decomposita* and *G. schizophylla*. *Cypripedium Lathamianum*, a hybrid between *C. Spicerianum* and *C. villoum*; and *Cypripedium Deedmanianum*, a hybrid between *C. Spicerianum* and *C. Chamberlainianum*, were also raised by me."

THOMAS MEEHAN.

THE career of Thomas Meehan is one to put before the young gardener as an incitement to work and study. By birth an Englishman, by profession a gardener, he has raised himself from a journeyman to be a leading municipal dignitary of a great city, the head of one of the most important nurseries in the United States, well known also in Europe for its collections of hardy trees; and what is of higher moment than mere business success is the fact that so important and so numerous have been his contributions to science that for thirty years he has held the position of Vice-President of the Academy of Natural Sciences in Philadelphia. His botanical work is marked by much originality and power of observation, but it is to be regretted that he has never been able to find time to crystallise and co-ordinate his numerous contributions into a consistent whole. He edited the *Gardeners' Monthly* for thirty years, was a leading contributor to at least six other journals, and still edits *Meehan's Monthly*, an illustrated journal of gardening and botany. As a practical man he is remembered as being one of the earliest to hybridise the *Fuchsia*, he having raised a cross between *F. fulgens* and *F. longiflora*, which received the name of *St. Clair*. He was the first to flower the *Victoria regia* in the United States.

Mr. Meehan, as we have said, takes a leading part in municipal matters in Philadelphia, of whose common council he is the father. It is to his exertions chiefly that the city has been provided with museums and public parks, the first of which was the garden of the American botanist, Bartram.

The following particulars have been gleaned from a communication to the Editor, with a few additions from Dr. Harshberger's book, mentioned later on; but we feel rather uncertain whether we

may not be offending Mr. Meehan's retiring modesty by giving them publicity. The presentation of his portrait to the Academy of Natural Sciences has, however, served as the occasion for our American colleagues to bear testimony to the worth of Thomas Meehan, and we should not like to be left out of the general tribute, particularly as it enables us to make a few corrections in the record. A handsome silver loving-cup was also presented by a number of teachers to Mr. Thomas Meehan on the occasion of his seventy-fifth birthday.

"My main object in life," says Mr. Meehan, "has been to build up my great nursery. Science and literature have been side issues — almost wholly labours of love, with no thought of material compensation. Perhaps this is one great reason for my love of the editorial 'we,' with its inferred impersonality. At any rate, I have been adverse to public portraits and biographies. Until now, no picture has been taken, in spite of many importunities, since 1876, when one was taken as one of 'one hundred representative Philadelphians,' to place in a safe to be opened in 1976. As you have been one of my most valued friends, whom I have had to disappoint, this prelude seems proper, while sending you the enclosed from one of our city daily newspapers. As the agricultural papers are asking the *Record* for the use of their cut, I suppose it will now become public property, and perhaps be widely copied.

"While the portrait was being painted, friends in the Academy and others would engage me in conversation, and I find also members of my family. In this way I suppose the 'memoir' has been constructed. It is, on the whole, better than my good friend Dr. Harshberger got together in his *Lives of Philadelphia Botanists*, which is incorrect in some particulars. At the end of my father's apprenticeship in the garden of the Lord-Lieutenant of Ireland, he came at once to Watson's nursery at St. Albans. He was as early in life fond of botany and gardening as I was subsequently. I was head gardener, with one man under me, for Mr. Vaux, Paymaster to her Majesty's Forces, and secretary to the Ryde Horticultural Society, when I was but seventeen; and at eighteen I was gardener to Sir Augustus Clifford, Usher of the Black Rod, going to Kew in my nineteenth year." [Where his political opinions are said to have given offence to Sir William Hooker.]

In 1848, Mr. Meehan left Kew, and landed in the United States, and entered the establishment of Robert Buist. In 1852 he started the famous nursery at Germantown, but lost nearly everything during the War of the Secession.

"My mother was of the Denham family. When they married, both my father and my mother had considerable means, which they invested in the purchase of a fruiterer and provision business in Regent's Park — 'good-will' being a great consideration, when there was none to speak of. The business being unsuccessful, my father at once found a refuge in Oxley and Bunney's nursery, at Ball's Pond, Islington, from whence he was engaged as gardener to John Young, Esq., on his large estate at Westridge, in the Isle of Wight. He was never a week without an income, and the 'abject poverty' story probably arose from my having told my children in years gone by that my mother was my chief school teacher, and that the Book of Common Prayer, Bunyan's *Pilgrim's Progress*, Green's *Herbal*, and the Bible, were my only school-books, as being about the only books in the house — this not because of poverty, but in those days it was expensive to take much furniture from London to the Isle of Wight.

"In like manner my being 'deaf from infancy' requires qualification. That I have been slightly hard of hearing is true, but one who has hundreds of times presided at political, scientific, and other meetings, engaged in discussions, and acted as reporter for newspapers and magazines, can hardly be classed with the unqualified 'deaf.' I am close to my seventy-fifth birthday, but can still

take my place in the deliberative assembly, the Philadelphia Municipal Council, to which I have again been re-elected from April 1 for another two-year term, the first having been in the session of 1882-3. But I must not complain. If I cannot take time to write what my friends want, I should be satisfied to accept the chances. *Thomas Meekin.*"

NEW OR NOTEWORTHY PLANTS.

BERBERIS CONGESTIFLORA, VAR. HAKEOIDES.*

THIS is a very striking hardy shrub, with long slender leaf-stalks, roundish leaves, edged with slender spines. The numerous yellow flowers are

but with the greater part of their surface coloured, in two or three sections of a dark purplish-red, the sections being marked off by thin irregular cream-white bars, the apex and very narrow margin being also white. Petals cream-white, showily marked with several large, and some small purplish-red coloured blotches, and the whole surrounded by a border of irregular small spots of a purple tint inside the narrow fringed cream-white margin; the apical portion of about $\frac{1}{2}$ inch being also white. Lip with light orange coloured crest, with one large red-brown spot in the front, the fringed blade being of primrose colour. It flowered with the possessor of so many handsome spotted Odontoglossums, Norman C. Cookson, Esq., Oakwood, Wylam, Northumberland (gr., Mr. Wm. Murray) J. O'B.

CULTURAL MEMORANDA.

CALCEOLARIA AMPLEXICAULIS.

THIS species of *Calceolaria* was once largely grown for bedding purposes, but not always with the best effect. Happily the public taste in bedding out has changed, a tasteful blending of colours is preferred to violent contrasts, and the colours of the flowers are less garish. The idea is to plant taller subjects generally, and this *Calceolaria* certainly ranks among the best for the purpose. It attains a height of 3 feet when planted in loamy soil, and flowers abundantly. Cuttings made of the young shoots strike readily in September, and may be placed to the number of six in a 60-pot, using a rich sandy loamy soil for filling the pots. The pots are placed



FIG. 112.—A CINERARIA WITH ROLLED FLORETS.

(See "Cactus Cinerarias," on p. 391.)

arranged in stalked globular heads springing from the axils of the leaves. The cultivated plant, as shown by Messrs. J. Veitch & Sons, on April 23, differs from the plant figured by Gay, in that the stalks supporting the inflorescences are shorter and more crowded. It represents, in fact, the variety *hakeoides* described by Sir Joseph Hooker in the *Botanical Magazine*, t. 6770 (see fig. 111, p. 295).

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM × WILCKEANUM SIBYL.

WE have in this variety one of the darkest coloured and most heavily blotched flowers that I have seen, and broader in its segments than almost any other. The sepals are of a cream-white tint,

* *Berberis congestiflora*, Gay, *Hist. Fl. et Pol. de Chile*, i. (1845), p. 75, t. 3. :—"B. spinis foliaceis latissimis bilobis pluridentatis sub-amplexicaulibus demissis; foliis petiolatis aut subsessilibus, rotundatis (marginatis spinoso-dentatis quandoque mucronatis plus minusve dentatis aut integris; floribus armeniacis in corymbum densiusculum approximatis folio longioribus." Prov. of Valdivia. Fl. in September.

PHALÆNOPSIS AMABILIS (Blume) VAR. RUNESTADIANA.

A noble flower of that species of Moth-Orchid known in gardens as *Phalænopsis grandiflora*, has been sent by M. Lucien Liuden, of l'Horticole Internationale, as an example of the fine quality of the flowers of their recent importation. The fine flower presents a perfect circle $4\frac{1}{2}$ inches across, nearly filled in by the fine white segments, whose surface glistens with a silvery lustre. Each petal is $2\frac{1}{2}$ inches wide, the upper margins almost touching the edges of the broad ovate upper sepal. The erect front of the side lobes, basal auricles of the front lobe, and the curved tendrils of the lip are of bright yellow tint, and the crest and bases of the side lobes are spotted with red. The exterior of the flower is slightly tinged with rose colour, which imparts a delicate pearly hue to the front surface. It is a splendid type, and now that cultivators manage their *Phalænopsis* better than formerly, it should get well represented in gardens. It is not a variety of the plant figured in *Lindenia II.*, which is *Phalænopsis Aphrodite*, Reich. f. J. O'B.

in a cold frame, and the cuttings prevented from flagging by sprinkling them twice or thrice a day, and keeping the frame closed and shaded. When roots form, air is admitted for an hour or two at the first, and it is gradually increased to full exposure in mild weather. A shelf in a greenhouse is a suitable place for them in the winter. Early in the year they are potted singly into 3-inch pots, and grown freely in a pit from which frost is excluded. The leading shoots should be supported by stakes. The plant does not like much water until well established, but when planted in the beds, water must be copiously applied in hot weather. *H. T. Martin, Stoneleigh.*

LIRIANTHUS RUSSELLIANUS.

THIS species was once popular among the old school of gardeners, who took a delight in the cultivation of difficult plants; for the subject of this note ranks among those which require more than ordinary skill in the cultivator. The plant is a biennial requiring intermediate-house treatment, and is usually raised from seed sown in the month

of April. The seed being exceedingly small, must be sown on the surface of sandy, finely-sifted, peaty soil, and covered only with a piece of glass, and over this a handful of moss. The seed-pan or pot must be well drained with small crocks, and water afforded the soil before the seed is sown; no water being applied after sowing before the surface gets dry. The seed-pans should be placed on a mild hot-bed till the seeds germinate, when they should be removed to an upper shelf in a temperate-house, and kept there till the seedlings have grown large enough to be handled, then pricked off into thumbs. A suitable compost for the plant consists of loam, peat, and flaky leaf-soil in about equal proportions, with numerous small pieces of charcoal, and some sharp sand. Essential points to bear in mind in the culture of this beautiful flowering plant are ample drainage, a sweet soil, and a very careful application of water. *H. T. Martin, Stoneleigh Abbey Gardens.*

[The plant is a very slow grower, and seedlings raised at the date named will not be more than 2 to 3 inches high when growth ceases at the approach of the cold weather; meantime the plants must have been shifted twice or thrice, the growth of the roots being greatly in excess of that of the leaves and stem. Hence, in August, the time for the last repotting, the little plants will seem to be greatly over-potted. They should be placed on a shelf near the glass in a greenhouse, and never allowed to get dry; neither must they be afforded too much water, or rotting of the root-stock will occur. In fact, the affording of water in autumn and winter is the chief difficulty. Loss of plants is inevitable, and if one dozen are wanted, three or four dozen should be grown to make good the losses. *Ed*]

FLORISTS' FLOWERS.

THE FIRST BREAK IN CHRYSANTHEMUMS.

To the gardener who has but a little experience in the cultivation of Chrysanthemums, the term "first break," is apt to be a puzzle; and to errors made at this stage may be traced much of the lack of success attending the cultivator's efforts. Many plants are spoilt at this stage of their growth through want of attention or lack of knowledge. If I explain the meaning of the term "first break," it may be of use to some readers of this article. The "first break" is caused by the formation of a flower-bud in the point of the young growing stem, and the arrested upward extension caused by the formation of this bud, induces wood buds to start from the axils of the leaves below the point where the flower bud formed and produced shoots. On some varieties as many as ten additional shoots will arise from one stem, but they are usually fewer in number.

These would, if let alone, in due time grow and produce flowers, but the object being the production of large-sized blooms, the shoots have to be limited in number, in some cases to two, and in others to three.

There is no exact time for a plant to make its first break: it differs according to the variety, the time the cuttings were struck, and the locality in which they are grown; all these circumstances influence the date of the first break.

Plants struck in the month of December last are now showing their "first break." Directly the flower-bud can be seen, pinch it out, and remove all the shoots except four near the tip of the shoot or stem. When these have grown, and it is seen which are the more promising, retain as many as are required, and forthwith remove the others. By this method the energy of a plant is concentrated in the shoots that are left, and these should be tied to a stake, and afterwards, when the plants are standing in their summer quarters, each shoot should be afforded a separate support, as by so doing the whole of the shoots receive their full share of light and air, and become matured. *E. M.*

THE WEEK'S WORK.

THE FLOWER GARDEN.

By T. H. SLADE, Gardener to Lord Poltimore, Poltimore Park, Exeter.

Hardy Water-Lilies.—Where no lake or pond exists in the garden, low-lying moist spots may sometimes be found where, with but a small expenditure of labour, miniature Lily-ponds may be made, and failing a constant supply of water in the summer-time, large tubs might be sunk in these places, and Lilies planted and grown in them with a fair amount of success. The roots should be sunk in the tubs with a little soil around them. Open water-tanks for garden use may also be utilised by simply placing the Lily plants in open baskets, with a small quantity of soil, and some stones over all to sink it to the bottom and keep the soil in place. If the tank is kept filled with running water, the plants will be greatly benefited, and not much water needs to pass through the tanks or tubs. Marliac's hybrids and the Laydekeri varieties are suitable for these small places, and although at present somewhat expensive, they are beautiful Lilies, well worth the prices charged for them.

Evergreens, Hollies, &c.—The planting or transplanting may now be undertaken, and if showery weather occur, the shrubs will soon start growing. If there are doubts concerning the ball of earth around the roots being sufficiently moist, afford water copiously previous to disturbing the soil, and wait a day or two. Unless the weather be showery, the removed shrubs should be syringed daily, and water applied at the roots till growth becomes more active. A mulch of leaf-soil does good on light land.

Sciadopitys verticillata and *Taxodium sempervirens*.—Young specimens of these species are apt to form more than one leader, but timely attention with the knife will soon remedy this before growth commences.

Jasminum nudiflorum and *Chimonothus fragrans*.—Let both of these plants be pruned after flowering.

Spring Bedding.—Although the season is a backward one generally, the appearance of the beds filled with spring-flowering plants has altered greatly for the better, the warm days, though tempered by cool winds and occasional frosty nights, having caused the flowers to open freely, and by the time this Calendar appears many of the plants in south country gardens will be past their best, and lifting and planting in the reserve garden will soon commence. The bulbs should be taken first, laying them in, in rows, on a sunny border to mature. These bulbs will not be suitable for filling the beds again, but they will come in usefully for planting in shrubberies and mixed borders, and if belonging to the Narcissus group, they may be planted in the grass in the pleasure grounds and woodlands. Jonquils answer remarkably well for this purpose, and for furnishing blooms for cutting. Before clearing the beds, notes should be taken as to the manner in which the different plants have behaved, and as regards the arrangements for 1902. Polyanthus, Myosotis, and other hardy perennials should, if large enough, be divided when lifted, and planted in lines a foot each way in the reserve garden; and if the weather be bright and dry, they must occasionally be afforded water or it will be long ere they start again. Wallflowers do not pay for planting in the reserve, as better plants are obtained from seed sown annually. Wallflowers are charming old-fashioned flowers, but few spring bedding plants exhaust the soil more, and for this reason the plants should be removed soon after flowering.

Digging the Beds.—As soon as the spring occupants are removed, the beds should be manured and dug over, thoroughly breaking up the clods, as the beds will lay fallow but for a short time, and if left in a very rough state is sometimes difficult to get a fine tilth by the time of planting. Plants requiring a richer soil than that ordinarily used in bedding should have some fairly rotten manure put in below the first spit, or thoroughly incorporated with the soil when digging the beds. This must largely depend on whether the plants to be put out are deep or shallow-rooting. The edges of the grass should be trimmed with the edging iron or edging shears before the beds are dug.

Rosary.—Vacant spaces in the beds should now be made good, using for the purpose Roses that are

established in pots. In order to lessen the cost where plants must be purchased from the nursery, it is a good plan to grow duplicates in pots of such varieties as are likely to fail, for planting at this season.

Seeds to sow during the present month are Wallflowers, which sow in drills drawn at 1 foot apart, and thin the plants when large enough. Good varieties are Blood Red, Belvoir Castle, the most fragrant and best yellow; Primrose Dame or Faerie Queen, pale primrose; Ruby and Eastern Queen, salmon-coloured. Polyanthus seeds of sorts, the large yellow being one of the most effective, should be sown in boxes, and placed in a cool shaded frame, or on a shady border. *Myosotis dissitiflora*, *M. sylvatica*, *M. alpestris*, white and blue; *M. Victoria*, very compact (if to flower simultaneously with Polyanthus, *dissitiflora* is the best); *Limnathes Douglasii*, sow in light soils; *Silene pendula splendens compacta* is very effective, and gives variety in colour, but this charming spring-flowering plant is very liable to damp off in heavy soil, and therefore is almost useless in such land.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. I. MEASURES, Esq., Cambridge Lodge, Flodden Road, Camberwell.

Hybridisation.—There is no branch of Orchid-culture that has made so much progress during the past half century as the raising of Orchids from seed. Those who have studied the records of the parents which have been used in the production of the hybrids that have been introduced up to the present time, will not fail to observe the slight regard that has been given in the past to the selection of the parents used in cross-fertilisation; the result of this is illustrated by the inferior forms represented by many of the offspring. There are exceptions, I am aware; take, for instance, *Cypripedium Spicerianum*. This species has participated in more crosses than any of its family, yet how few really fine things have been the results of these labours. Many of them would have been thought worthy of consideration at the period when crosses were difficult to procure; but Orchid enthusiasts of to-day want only the best, and so it comes to pass that the inferior seedlings are cast aside as being unworthy of consideration. A few years back, £25 to £50 was considered a big price to pay for a good hybrid; now-a-days there is no hesitation of asking and procuring £200 for crosses of merit on their first appearance. Surely, under such circumstances a careful selection of the parents is worth considering. The hybridist of to-day has this advantage over his predecessors, that he can refer to records of crosses that have been made, and can form for himself some idea as to the most successful parents in the past; this should at least assist in the selection of the more desirable species and hybrids as parents when making new crosses. It does not follow that these careful selections will in every instance prove so satisfactory as we might hope, but it will, I have no doubt, aid in the production of desirable plants. Many of the best hybrids and crosses that have been produced are well worthy of repetition, as they will, in most cases, prove scarce and valuable plants for many years to come. The hybrids of later introduction have, in many cases, been remarkable for distinctness of colouring, and these new hybrids will prove useful in the future, as they cannot fail to add to the variations in the offspring, and for this reason they should not be overlooked. From my own experience and observation, the secondary hybrids possess considerable more variation than is found among seedlings of the first crossing of two species.

The bigeneric hybrids have been steadily increasing of late years, and here is a large field still remaining available for experiment, and one that is worthy of the attention of the Orchid hybridist. The generic distinction between *Oncidium* and *Odontoglossum*, and other closely allied genera, is so small that they offer great facilities for experiments, with a view to obtaining bigeneric hybrids. A few years ago it was not thought possible to obtain such hybrids, but such dubious conjectures have been removed by the successful raising and flowering of several bigeners that have been obtained through the handiwork of the hybridists. Among these may be mentioned *Epiphronitis Veitchii* (*Sophrontis grandiflora* × *Epidendrum radicans*), *Epi-Cattleyas* between *Epidendrum* and *Cattleyas*, *Sophr-Cattleyas* derived

from the species indicated by the name, and many others. These have formed very interesting and desirable additions in many instances, which afford sufficient encouragement as to justify further experiments. I have wandered somewhat from the general course of the "Week's Work," but I trust the remarks and points I have endeavoured to make clear may assist those interested in the raising of Orchid seedlings; they should select only the best forms of the different sections as parents, as this is the only safeguard against disappointment when the hybrids flower, after years of care and attention.

THE HARDY FRUIT GARDEN.

By C. HERRIN.

The Strawberry.—The growth of the plants has been rapid during the past week or two, and the beds should be cleared of weeds, and receive without further delay, a mulch of long stable litter, or some material that when washed clean by the first heavy showers of rain will keep the fruits clean and retain moisture in the soil. The litter should be laid in the alleys between the plants, and pushed up beneath the foliage close up to the crowns. If the weather be dry, apply water copiously through a hose or by watering-cans, so as to wash the manurial ingredients into the soil and cleanse the straw. Manure-water may also be applied, especially to plants which are older than one year. Pour the manure-water along the alleys only, and apply clear water afterwards.

Forced Strawberry-plants.—The later batches of plants now being removed from the forcing-houses, require but little hardening-off at this season, and they are excellent for planting in the quarters to afford fruit for the next year; and when well treated, they produce a very heavy crop of fruit. The early variety *Vicomtesse Héricart du Thury* will afford a few fruits in the autumn of the same year in which they have been forced. Before planting, these plants should have the ball of earth and roots reduced to nearly half its original size, and the soil made fairly moist. The ground should have been manured and trenched; and the plants should be set out at 2 feet apart, allowing an alley of 3 feet in width at every third or fourth row. Make the plants very firm in the soil, and mulch with short stable-litter.

Raspberry quarters.—These should receive a heavy mulch of rotten manure, and in light soils an application of water may also be necessary. Manure-water may be afforded if the canes are weak, or the land has not been well manured.

The Bush Fruit quarters.—In fine weather, and while the land is dry, run the hoe through the quarters, cutting up weeds and aerating the soil. Where the land is not mulched, a hoeing checks the evaporation of moisture from the soil.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HUSSEY PACKE, Esq.,
Prestwold Hall, Loughborough.

The Conservatory.—Remove plants of *Azalea indica* as they pass out of flower to a temperature of 65°, and syringe them daily. *Genistas* and *Deutzia gracilis* may be pruned and removed to a heated house to complete their growth. Prune severely any old plants of *Datura arborea* which may have passed out of flower. Encourage the late *Richardias* by affording them liquid manure frequently. *Primulas* and the florist's *Cinerarias* are now past their best and should be cleared away, but *Cineraria stellata* is still useful as a decorative plant, and affords flowers for cutting. Now is the season to make a sowing of this strain for flowering after Christmas. The conservatory from this date and during the summer months will be kept gay with Ivy-leaved *Pelargoniums*, *Hydrangeas*, *Fuchsias*, show *Pelargoniums*, *L. longiflorum*, and *L. l. Harrisii*, late pots of *Lily of the Valley*, summer-flowering varieties of *Erica*; *Celosias*, *Coleus*, *Tuberoses*, *Begonias*, &c. Any contemplated re-arrangement of this structure, painting or repairs, should be executed during the summer months. Climbers at such times can be more severely pruned, thereby enabling the necessary cleaning to be carried out with greater facility.

The Stove.—An increase of temperature may now be afforded to plants in this structure, and there should be a more frequent damping of the stages and paths to compensate for the rapid evaporation of

moisture during dry weather. *Codiaeums* (*Crotons*), *Ixoras*, and other hard-wooded stove-plants, which have filled their pots with roots, will be benefited by frequent applications of weak manure-water. *Nepenthes* require constant shading, and to be placed at the warmer end of the stove. If any vaporising requires to be done, it would be advisable to remove *Nepenthes* from the house before this is done.

Poinsettias.—Select some of the old cut-back plants, and place them in a temperature of 65° in order that they may produce cuttings; removing the unripened growths and weak shoots, so that the shoots may be stronger. Syringe the plants frequently, and apply water at the root when growth has commenced. Hitherto our plants of *Poinsettias* have been in an intermediate-house. For the next six weeks they will occupy a position beneath the greenhouse stage for the purpose of retarding them. We like to have them in flower about Christmas and later.

Gardenias that have flowered will now need less water, and to be pruned into symmetrical shape, and placed in an intermediate-house, where they should be syringed frequently. When growth has become general, and the young shoots are from 1 to 2 inches long, the plants may be repotted into pots two sizes larger, using a compost of turfy loam two parts, and peat one part, and adding a little bone-meal and sand. A moist atmosphere and frequent syringings will be necessary until growth is complete. They may then be afforded fuller exposure to the sun, and be removed to a cooler temperature. It is advisable to have always a batch of succession plants. The troublesome eel-worm often attacks the plants after they are two years old. Cuttings that were put in as I advised in a former calendar, should now be growing in 3-inch pots near to the glass. They should be pinched occasionally, and afforded a final repotting in July, after which time pinching will be discontinued.

FRUITS UNDER GLASS.

By MAJ COLM MCINTYRE, Gardener to SIR CHAS. TENNANT,
The Glen, Innerleithen, Peeblesshire.

Early Peaches.—Fruits now stoning should not be subjected to more fire-heat than is needed to maintain a temperature of 60° to 65°; ventilate early at 65°. When the latter degree has been reached, afford ventilation, and do not permit the warmth to exceed 75°, unless all the ventilators have been opened. Remove superfluous growths, and tie in those shoots which will be necessary. If the shoots are likely to be crowded, thin them out as soon as the fruits have "stoned." When that stage has been passed, maintain a considerable degree of moisture in the house, and afford a copious supply of water to the borders. If the surface of the border has not been mulched, apply sufficient short, half-decayed manure as will cover it 2 or 3 inches deep. The crop should average about one fruit to every foot of trellis covered by the trees, but vigorous shoots may be permitted to carry more than weak ones, and doing this will encourage evenness of growth throughout the trees. Maintain a night temperature of 60° to 65°, and 70° to 75° by day, rising by sun-heat to 80° or 85°, and after being closed for the day, to 90°.

Trees started later will soon approach the stoning stage. When thinning the fruits, leave two on strong shoots and one on weak ones, selecting those that are best placed. Thin out the shoots if necessary, that plenty of light and sun may reach the fruits. Weakly and fully-cropped trees should be assisted with liquid-manure, but do not afford any to trees that are already making vigorous growth, as it may cause the fruit to drop when stoning.

Late trees.—Disbud and tie-in shoots as required. Frequently examine inside borders with Kirk's Border Tester, and when necessary afford copious supplies of water. Continue to syringe the trees twice a day, excepting when the nights are likely to be cold and the trees are growing in unheated houses, when the syringing should be done early enough to allow the foliage to become dry before nightfall. Close the houses early.

Early-fruited Figs in pots.—The quantity of water afforded at the roots may now be lessened, but still the supplies needed to keep the foliage in good order must be afforded, and syringing discontinued. A circulation of warm air is necessary to give the fruit a good colour. The top ventilators should be left open a little on mild

nights. Trees from which the crop has been gathered may by degrees be afforded more air with a view to the thorough ripening of the wood at an early part of the season. Fruits left on these trees to produce a second crop should be well thinned, leaving only the most forward, otherwise the crop will not be cleared before it is necessary to repot the trees. Spare no effort to keep red-spider in check. Syringe the trees twice a day, also afford liquid-manure water occasionally. Expose the trees to full sunshine, and gradually harden them off, so that when the second crop is gathered, they may be removed out-of-doors for a couple of months. Regulate the growths, removing the vigorous shoots which are likely to interfere with the proper balance of the head. The trees permanently planted in houses will require attention in stopping the young shoots at the fourth or fifth leaf, and in thinning the strong growing shoots so as to admit light and air to the fruit. Syringe the trees twice daily, and apply water abundantly at the roots as often as may be required, employing weak liquid manure to trees in small and restricted borders. When the first crop on early-started trees shows some indication of ripening, a little ventilation should be allowed constantly at the top of the house until the crop is perfected, and in favourable weather a free circulation of warm air should be afforded. Give water when indications of ripening appear, especially to large trees with limited root room, and cease to syringe them. Let the fruit be perfectly ripe before gathering, unless it is to be packed for transit to a distance.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bicton,
East Budleigh, Devonshire.

Asparagus.—Look over the beds early each morning, and cut all heads that are 4 to 6 inches in length. If there are more than are required for immediate use, tie them in bundles, and stand them in an inch or so of water in the fruit-room; nevertheless, this vegetable is much better when cooked the same day as it is gathered. Do not thrust the knife deeply into the soil, or you may sever other growths not yet showing above ground. If the plants are strong, all the "grass" may be kept cut, but if weak, leave some of the growths, as these will encourage the plants to form roots. All stray seedlings, whether in the lines or between the rows, should be removed. Afford a rather light application every ten days of salt, nitrate of soda, canary or ichthemic guano, any one of which is beneficial to this crop; and if the weather is dry, it is best to stir in the same with a Dutch-hoe, and destroy weeds at the same time.

Vegetable-Marrows should be shifted into 5½ or 6 inch pots, using loam and a little leaf-soil. Keep them near to the glass in a cold frame, and close the lights, and at about 3.30 P.M. spray the plants overhead. The bed in which these Marrows will be planted having been put together some time since, should now be made firm, and hand-lights placed upon it at distances of 6 feet apart. Under each of these put a bushel of fibrous loam, and replace the lids so that the soil may become warm. Planting may be done in about ten days afterwards. When this has been done, keep the lights close, and shade from the sun if necessary for a couple of days, when a little air should be admitted. Remove the lids on warm days as soon as the plants have commenced to make growth. Ridge Cucumbers should be treated similarly, excepting that the points of the shoots should be nipped out a few days before or after planting.

The Frame-ground.—Afford water to Carrots, Turnips, Radishes, Potatoes, &c. The first three crops mentioned do not now require the lights to be put over them. Carrots and Turnips should now be yielding useful roots. The earliest sowing of Turnips out-of-doors must be thinned in good time, and be afforded water copiously during dry weather.

Miscellaneous.—Seed-beds of Broccoli, Cabbage, Cauliflower, &c., may be hoed, and if fly (aphis) is troublesome, dust the plants with wood-ashes and lime in the evening, repeating the process for several days. Afford water to these seed-beds before the plants feel any of the effects of drought. Examine stored Potatoes, and remove from them all growths. Lay the tubers out in lesser bulk, and away from the light.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

(Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.)

APPOINTMENTS FOR THE ENSUING WEEK.

WEDNESDAY, MAY 15—Whitsun Day (Scotland).

THURSDAY, MAY 16—Royal Botanic Society, Meeting.

SALES.

WEDNESDAY NEXT—Lilies, Begonias, Perennials, Palms, Ferns, Phlox, &c., at Protheroe and Morris' Rooms.

FRIDAY NEXT—Imported and Established Orchids at Protheroe and Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick—54° 3'.

ACTUAL TEMPERATURES:—

LONDON.—May 8 (6 P.M.): Max. 52; Min. 41°.

May 9, 11 A.M.—Showery.

PROVINCES.—May 8 (6 P.M.): Max. 51°, S.W. Ireland; Min., 44°, N.E. Scotland.

The Supposed Origin of Potato Tubers. At the present day Fungi are held responsible for many results, some beneficial, but mostly injurious, as viewed from the human standpoint. That both harm and good result from the effects of fungi is not to be wondered at, when we remember that at least fifty thousand different kinds are known, and these, like sleuth hounds, are following everywhere in the wake of the higher plants, on whom they depend entirely for food. Among these a large number obtain their nourishment from dead or decaying vegetable matter, wood, leaves, humus, &c., and consequently do a direct amount of good, inasmuch as they hasten the decomposition of the substance they grow upon, and thus render it once more available for plant food. In this work they are aided by their allies, the bacteria.

A second group of fungi, numerically the largest, obtain their food directly from living plants, and consequently prove very destructive. The collapse of the plant attacked may be sudden, as in the case of the Potato disease; or slow torture may be the result, as when a Vine or Rose is attacked by mildew—but in every instance where a cultivated plant is attacked, there is more or less pecuniary loss.

In rare instances, the morbid products resulting from the action of parasitic fungi are of economic importance; as an example, the much swollen succulent stems of a grass, *Zizania latifolia*, are sold as a vegetable in the market of Hanoi, Tonkin. The swellings are caused by a fungus closely related to the smut of Oats. When this fungus is mature, the myriads of spores form a black, sooty powder; and mixed with oil they are widely used in Japan by those having thin eyelashes to make them look darker, and also by women having thin or grey hair. Furthermore, the spores are also much used in Japan in the lacquer industry to produce a rust-coloured ware when mixed with lac.

Notwithstanding the serious amount of injury caused by parasitic fungi, we believe that all this, and even more also, would be overlooked if the theory as to the origin of Potato-tubers, along with the inestimable possibilities it foreshadows, as indicated by a French scientist named NOEL BERNARD, could but be proved to be true, and capable of practical application and extension. This theory is as follows: Potatoes normally do not form tubers, the presence of the latter being entirely due to the action of an endophytic fungus, *Fusarium*

Solani, which attacks the underground stolons, causing an excessive development of tissue, the cells of which become filled with starch. The supposed proofs advanced in support of this idea are (1) a theoretical statement, the outcome of observations in comparative biology, and formulated as follows, "The tuberculation of buds is the consequence, and the symptom of the infection of the roots by endophytic fungi." Being theoretical, this statement is unassailable, and may thus be ignored. (2) Experimental proof: the author found either spores or mycelium of *Fusarium Solani* in the dead and otherwise empty cells forming the "skin" of sound Potatoes, and assumes that they are constantly present in this position, but do not penetrate into the interior of the Potato, their function being to commence growth when the Potato is planted, and to inoculate the young stolons which thereupon form tubers. Another convenient assumption, necessary for the working out of the theory, is the presence of the *Fusarium* everywhere in the soil, so that even if you peel your Potatoes before planting, and thus remove the danger of inoculation from mycelium, or spawn, growing from the Potato skin, the stolons are yet certain of infection from the fungus present in the soil.

Remembering the danger of infection from the fungus present in the skin of the Potato, sixteen Potato were planted in pots filled with fine quartz sand, in which it was supposed that the mycelium would not spread; into eight of these pots scraps of Potato infested with the *Fusarium* in active growth were introduced, so that infection of the young stolons might be secured with certainty, and at an early stage of growth. The eight remaining pots were not artificially inoculated. To commence with, three Potatoes in each lot refused to grow beyond the baby stage; of the remainder, which were examined after a period of sixty days' growth, tubers were found on both lots; but in greater numbers, and of larger size on the artificially-infected plants. The author states distinctly that the seeds of the Potato are not infested with the *Fusarium*, but the attempt to grow Potatoes from seeds in a sterilised medium yielded no results. Disappointment is expressed at the tardiness of growth in the experiments, but we believe that many readers of this Journal could chronicle almost complete failure of the Potato crop, even when planted in a more favourable medium than that of sterilised sand.

To many people, the result of the experiments recorded above will probably appear not quite convincing; at all events, most will agree that percentages obtained from experiments on ten Potatoes fail to establish the point that Potato tubers owe their origin to the irritation set up by a fungus. This is much to be regretted, as the author considers that the tubers of many other plants are also caused by endophytic fungi, and if this view could be established beyond doubt it is but reasonable to suppose that the roots of many plants useless at the present day, would respond to the irritation of a fungus at first artificially applied and carefully led up to a condition of mutualism, culminating in the formation of tubers, some of which, owing to their excellency, might even drive the Potato from cultivation.

Vegetable pathologists look upon *Fusarium Solani* as very destructive to Potatoes, causing a wet rot, especially when not perfectly dry when stored. *Fusarium lycopersici*, which is simply a form of *F. Solani*, interferes much with the roots of Tomatoes, causing "sleepy disease," but tubers have not yet appeared.

Many other species of *Fusarium* are recognised as destructive parasites.

Finally, but for the high reputation of the publication in which the theory as to the origin of Potato-tubers appeared, the author might well be suspected of trifling with the credence of those who place implicit belief in all printed matter.

Horticultural Honours.

A FEW years ago it was a frequent subject of complaint that honours were few and far between in the horticultural world. The complaint was, no doubt, a just one considered from some points of view. In the endeavour to remedy it, the usual difficulties were encountered. The choice of persons or of a corporate body to make the selection, the inevitable differences of opinion as to the claims of particular candidates, the heartburnings and jealousies that might possibly be occasioned—all these matters had to be weighed, and as far as possible prevented. The Victoria Medal was instituted by the Royal Horticultural Society with the express assent of her late Majesty, in commemoration of the QUEEN'S second Jubilee; and the number of recipients corresponds with the number of years of the Victorian era.

It must be admitted that the Council of the Royal Horticultural Society has accomplished its delicate task very satisfactorily. Doubtless other selections might have been made, but on the whole they could not be better or more representative. The Victorian Medallists are necessarily British subjects.

The Veitchian Medal, awarded by the VEITCH trustees, was instituted before the QUEEN'S Jubilee, and is much more restricted as to numbers, but it is bestowed on British or on foreign horticulturists; and so it happens that the Veitchian Medallists include among their numbers many of the most prominent of what the French call the *summités horticoles* of the continent and of the United States. The qualifications of the honoured ones were set forth briefly by Sir TREVOR LAWRENCE at the meeting of the Royal Horticultural Society on Tuesday last, and they will be found stated in fuller detail in these columns. We are sure that their fellow horticulturists will give us a mandate to offer them on their behalf the warmest congratulations.

VEITCH MEMORIAL MEDALLISTS.—The following gentlemen have been recipients of the medal awarded by the VEITCH Trustees:—

1889. Archibald F. Barron	1896. Charles S. Sargent, Boston, U.S.
1890. Bruce Findlay (since deceased)	" Frederick W. Burbidge
" David Thomson	" Malcolm Dunn (since deceased)
1892. William Watson	1897. Norman C. Cookson
" John Heal	" Martin R. Smith
1894. Col. R. Trevor Clarke (since deceased)	" Professor L. E. Bailey, New York
" Adolphus H. Kent	" Charles Naudin (since deceased), Antibes
" George Nicholson	" Max Leichtlin, Baden-Baden
" James Martin (since deceased)	1898. Comte de Kerchove de Denterghem, Ghent
" Charles Moore, Sydney	" Edouard André, Paris
" Thomas F. Rivers (since deceased)	" Latour Marliac, Temple-sur-Lot
1895. James Bateman (since deceased)	1899. Léon Duval, Versailles
" Frederick W. Moore	1901. R. Irwin Lynch
" Victor Lemoine, Nancy	" W. Bradbury Latham.
1896. Henri L. de Vilmoria (since deceased)	

"CACTUS" CINERARIAS.—During the past few years there have been raised several very beautiful strains of *Cinerarias*, by crossing *Senecio cruentus* with other species, and with forms of the garden *Cineraria*, and they are likely to prove successful rivals to the old florists' type of dwarf, stiff habit,

producing compact heads of large, regular blossoms. To the many strains already described in these columns we have now to add another, which we saw recently in the houses of Messrs. H. CANNELL & SONS, Swanley, and which Mr. CANNELL describes as his "Cactus" strain (see fig. 112, p. 297). The flowers are single, and the florets are rolled in the same manner as the single "Cactus" Dahlias, but much more regularly. Many of the plants we saw had such heads of these starlike blossoms as to produce an effect quite distinct from any we have previously seen from Cinerarias, and the strain will be likely to gain more favour than has been accorded the Dahlias to which we have referred. The batch of plants included a considerable number of specimens and some variation in the colour of the flowers, but it would no doubt be easy to extend this variation. (In habit of growth the plants resembled the florists' type more nearly than the recent hybrid strains. Messrs. CANNELL'S "star" or "stellate" Cinerarias in another house were making an imposing effect, and with their grand branching panicles of pretty flowers, seemed essentially useful for cutting purposes. By the way, "star" Cinerarias would more fitly describe Messrs. CANNELL'S new strain than does the unsatisfactory term "Cactus."

THE TEMPLE FLOWER SHOW, MAY 22, 23, AND 24, 1901.—For the fourteenth year in succession, the Royal Horticultural Society will hold its great annual flower show in the Inner Temple Gardens (by the kind permission of the Treasurer and Benchers), on May 22, 23, and 24. Every year the desire of growers to exhibit increases, and the officials of the Society have a very anxious task in endeavouring to do justice to those growers who regularly support the fortnightly shows of the Society held at the Drill Hall, Buckingham Gate, and yet at the same time to encourage others also to come forward. The space is absolutely limited, by order of the Temple authorities; no more or larger tents may be erected; hence every new exhibitor whose entry is accepted entails the curtailment of the space allotted to previous supporters. A catalogue of the show is given gratis to every visitor, and will contain a notice of new and rare plants entered on or before May 14; it will also contain a programme of the music to be performed each day by the band of H.M. Royal Horse Guards (Blues). The judges will meet at the Secretary's tent at 10.30 A.M., May 22, at which hour punctually the tents will be cleared of all exhibitors and their assistants. The Fruit, Floral, and Orchid Committees will assemble at the Secretary's tent at 11 A.M. sharp, and the show will be opened at 12.30. All plants for Certificate must be entered on or before Friday, May 17. Address, Secretary R.H.S., 117, Victoria Street, Westminster, S.W.

THE SURVEYORS' INSTITUTION.—The country meeting of the Institution, 1901, will be held at Southampton, on Thursday and Friday, May 30 and 31. On Thursday, May 30, the Worshipful the Mayor of Southampton will hold a reception at the Hartley College, at 10.15 A.M., and deliver an address of welcome. The President will then take the Chair, and the meeting will proceed to the reading and discussion of papers until 1.30 P.M., when the Mayor will entertain the Members at luncheon in the Pier Pavilion. After luncheon the reading and discussion of papers will be resumed at the Hartley College until 4.30 P.M. In the evening the Members will dine at the South Western Hotel at 6.30 for 7 P.M. Dinner tickets (one guinea each, including wine) can be obtained from Mr. F. J. SMITH, 21, Portland Street, Southampton. The following day will be devoted to excursions to places of interest in Southampton, the New Forest, Southampton Waterworks and Winchester, Marine excursion to Cowes and Alum Bay. The annual general meeting of the Institution, to receive the report of the Council and the announcement of the result of the election of Officers for the ensuing year, will be held in the Lecture Hall on Monday, June 3, 1901, at 3 o'clock.

"ARE PRIMULAS POISONOUS?"—Under this heading a provincial paper does us the honour (?) to mention the *Gardeners' Chronicle*, and then goes on to speak in the extremest terms of the agony experienced by a patient stating to be suffering from eczema. If so, it must be a form of the disease unknown to the majority of medical men. Be this as it may, the remedy is stated to be found in the use of so-and-so's pills. As our name is mentioned in the article, we think it desirable to say that we know nothing about the pills in question; and further, that such statements as here alluded to are not inserted in our columns, and are also sedulously excluded from the advertisement department.

QUASSINE.—Messrs. T. CHRISTY & Co., 4, Old Swan Lane, Upper Thames Street, E.C., send us a sample of this preparation, which is intended to be used for syringing Roses and other plants. A small quantity (about a teaspoonful) is well mixed with a gallon of warm water; after being well stirred, 4 gallons of cold water are added, when the preparation is ready for use with the syringe. The preparation is free from the risks which attend on the use of some insecticides, and judging from the good effects of Quassia-chips, we have no doubt of the efficacy of this preparation.

"BIBBY'S QUARTERLY," though clearly issued in the interests of certain feeding stuffs, is, independently of its commercial nature, which is not allowed to be obtrusive, a beautifully got-up periodical, with numerous excellent illustrations, which will appeal to stock-breeders, and many articles of scientific interest, such as that on "Prepotency" and "Exclusive Inheritance," by Prof. EWART.

BOTANICAL MAGAZINE.—The plants figured in the May number are:—

Wyethia mollis, t. 7772.—A tall, Californian herb, of the Composite family, densely covered with whitish woolly down. The leaves are lanceolate, the largest a foot long. The orange-yellow flower-heads measure 4 inches across, and are enclosed within a tubular involucre, dividing at the edge into 10 to 12 linear oblong segments; each floret has a bristly pappus. It is a native of the valleys of the Sierra Nevada. It is a fine hardy herbaceous plant, which has flowered at Bitton, in the collection of the Rev. Canon Ellacombe.

Pyrus alnifolia, t. 7773.—A Japanese species, closely allied to the White Beam.

Lonicera pyrenaica, t. 7774.—A hardy shrub, cultivated in our gardens since 1793.

Mesembryanthemum calamiforme, t. 7775.—A species with spreading, curved, cylindrical leaves, of the thickness of the little finger, and whitish flowers, flushed with rose. Introduced to Kew by Mr. Chalwin, of the Botanic Gardens, Cape Town.

Manettia bicolor, t. 7776.—A well-known stove climber, with ovate acute, shortly-stalked leaves, and stalked flowers, about 1 inch in length, with short reflexed sepals and tubular, deep orange coloured, bristly corollas, with a yellow limb, dividing into short ovate acute lobes. It is a native of Brazil, whence it was originally introduced by William Lobb to Messrs. Veitch's establishment, at that time at Exeter. It is in flower all the year round.

"JOURNAL OF THE ROYAL HORTICULTURAL SOCIETY."—Potent among the causes which have contributed to the present prosperity of the Society is the regular issue and valuable contents of the *Journal*, edited by the Rev. W. WILKS. In the April number, which however did not reach us till May, is a retrospect of the Society for the last fourteen years, and a very satisfactory document it is. Notwithstanding the enormous increase in the clerical work, the percentage of the Society's income for office work amounts now to 8½ per cent., instead of 17½ per cent. The reports of the Fruit Show at the Crystal Palace, and of the other shows and meetings, are

necessarily discounted by the accounts which appear in the weekly horticultural press. Of more permanent value are the papers read before the Society, which constitute a body of information of the highest value for purposes of reference. The proceedings of the various conferences held at Chiswick are indeed exceptionally valuable. The illustrations are mostly reproductions from those which have already appeared in the various journals. The tail-pieces, to our thinking, would be better omitted, but this is a matter of opinion. At any rate, they should have some relevance to the subject, and we should be able to recognise what they are intended for, which is more than we can always do. What, for instance, is the leaf at the end of the last page of the proceedings? What is the plant figured on p. 382, and on p. 352? What have figs. 1, 2, 3, apparently representing flowers of *Lythrum*, to do with *Narcissus* in New Zealand? But these are but as spots in the sun. The Fellows get ample value for their subscription in the *Journal* alone, which reflects great credit on the hard-worked editor.

YELLOW CHINESE PRIMROSE.—The *Revue Horticole* of May 1 mentions the receipt from M. CHABAUD, of Toulon, of semi-double flowers of a distinct yellow colour, edged with white; the foliage is crested. M. CHABAUD observing among his seedlings one in which the yellow eye was more developed than usual, proceeded to cross it, and at length obtained the yellow flower above-mentioned, which he calls "Rêve d'Or."

ORNITHOPHILOUS FLOWERS.—E. WORTH gives an interesting account of the arrangements exhibited by flowers in Eastern Tropical Africa for pollination by the agency of birds. They are mostly scarlet or purple, or some shade of brown corresponding to the colours of the male, as contrasted with the female Nectariniæ, or honey-birds, the representatives in Africa of the American humming-birds, which are the chief agent in their pollination. The different forms are classified under eight types, viz. :—(1) The *Myrtacæ* type, in which the attractive part of the flower is usually the long white stamens (*Jambosa vulgaris*, *Barringtonia racemosa*); (2) the *Bruguiera* type, with pendent, bell-shaped flowers, the access to the honey being between the style and the stamens (*Bruguiera gymnorhiza*); (3) the *Ceiba* type, corresponding to DELPINO'S *Fuchsia* type (*Ceiba pentandra*); (4) the *Hibiscus* type, with tubular or bell-shaped, horizontal or pendent flowers, the organs of reproduction being either projecting or completely enclosed (*Hibiscus rosa-sinensis*); (5) the *Aloe* type, flowers with a long, narrow tube, equalling in length the beak of most Nectariniæ (*Aloe Volkensii*); (6) lip-flowers, with labiate, zygomorphic flowers (*Kigelia æthiopica*); (7) the *Erythrina* type, horizontal zygomorphic flowers, with strongly projecting reproductive organs (*Erythrina indica*); (8) flowers with explosive pollen-sacs (*Loranthus Dregii*). *Pharmaceutical Journal*.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—At the sixty-second festival Dinner of the Gardeners' Royal Benevolent Institution, which will be held on Wednesday, May 22, at the Hôtel Métropole, the Chairman, Lord LLANGATTOCK, will be supported by, amongst others, the Earl of EGERTON AND TATTON, the Dean of ROCHESTER, and CHARLES E. KEYSER, Esq., M.A. The Secretary, G. J. INGRAM, 175, Victoria Street, S.W., will be glad to hear at an early date from those gentlemen who desire to be present on the occasion.

GARDENING AT THE EARL'S COURT EXHIBITION.—On the opening day of the Military Exhibition it was, of course, too early in the season for much floral display. A good deal of the summer bedding was however arranged, and included the usual rows of scarlet and of pink Pelargoniums. In Queen's Court one of the beds bore the words "God Bless the King," picked out in *Echeverias*, and here and there were lines of Golden Feather and other border plants. The grass

looked refreshingly green, while the paths were hard and stony in a way that raised wishes for a gentle rain and a subsequent thorough rolling.

MR. OWEN THOMAS, who has been head gardener to the late **QUEEN** at Frogmore since 1891, is about to retire from that position on pension, and he will be succeeded by **Mr. McKellar**, at present head gardener to His Majesty the **KING**, at Sandringham. **Mr. THOMAS** served as a member of the Council of the Royal Horticultural Society a few years ago.

AURICULA YELLOW GEM.—**Messrs. Miles & Co.**, Hove, send us some fine blooms of a new yellow Auricula; the colour is very rich, and the flowers delightfully fragrant. The habit is said to be compact and good, and the variety should be very useful for decoration.

FLOWERS IN SEASON.—From **Mr. Anthony Waterer**, Knap Hill Nurseries, Woking, we receive a hamper full of cut branches of spring-flowering trees and shrubs of great beauty. They are too numerous for us to allude to in detail, but we may mention some of the more prominent:—

Exochorda grandiflora and *E. Alberti*.—It so happens that there was some discussion as to the comparative merits of these two beautiful Spiræa-like plants at the Drill Hall on Tuesday last. In the specimens before us the leaves of *E. grandiflora* are much shorter, the flowers are larger, $1\frac{1}{2}$ inch across, and borne in erect racemes. In *E. Alberti* the habit is more robust, the leaves longer, darker green; the flower racemes shorter, and more compact, and the individual flowers not much, if at all, exceeding 1 inch; the petals have less substance, and are more translucent than in *E. grandiflora*.

Magnolia Soulangeana, *M. S. nigra*, and *M. Lene*.—Of these, the first has flowers of obovate oblong form, petals over 4 inches long, white, flushed with rosy-violet. The variety *nigra* has petals of a very deep rosy-lilac colour. *M. Lene* has broad, top-shaped flowers, the petals nearly 5 inches long, very deep rosy-lilac in colour. Few, if any plants, are so magnificent in appearance. *M. Soulangeana* is said to be a hybrid between *M. obovata* and *M. conspicua*, and *M. Lene* is supposed to be a variety of *Soulangeana*, but the form of the flower is quite different. We suppose it to be a variety of *M. obovata*.

Cerasus Watereri is a dense mass of rose coloured flowers. It is one of the most ornamental of all the Cherries, and was figured in our columns in vol. xix., 1896, p. 517.

Pyrus spectabilis rosea is a Pear, with the flowers common to the genus, but semi-double, and deep rose coloured. Anything more beautiful in a plantation can hardly be imagined.

Pyrus Malus alba plena is later to expand than the foregoing.

Pyrus Malus floribunda, with linear-oblong saw-toothed leaves, and rich, rose-coloured flowers on slender flower-stalks, is one of the most marvellously beautiful of trees at this season.

Pyrus Malus atro-sanguinea is somewhat similar, but the flowers are smaller, and much deeper rose-coloured.

As a rule, it is an editor's business to strike out superlatives, but if ever their employment is justified, it is in the case of these supremely beautiful flowering trees.

HIS MAJESTY THE KING AND THE HORTICULTURAL SOCIETY OF BALLATER.—On the reception by his Majesty of a letter from this Society, expressing the deep sense of the loss occasioned by the death of the late **QUEEN**, the **KING** signified his gracious intention to become a patron of the Society. A communication has likewise been received from **Mr. J. Forbes**, H.M. Commissioner at Balmoral, intimating that the **KING** will be pleased to continue the annual donation to the Society contributed for so many years by her late Majesty **Queen Victoria**.

CATTLEYA × MISS HARRIS VAR. E. ASHWORTH.

[SEE SUPPLEMENTARY ILLUSTRATION.]

At the meeting of the Royal Horticultural Society, April 9 last, **Elijah Ashworth**, Esq., Harefield Hall, Wilmslow, Cheshire (gr., **Mr. Holbrook**), obtained a First-class Certificate for this plant, which was distinguished as his variety of the original, shown by **Miss Harris**, The Grange, Lamberhurst, at the meeting of the Royal Horticultural Society on September 17, 1889.

The plant was shown in 1889 incorrectly as being the result of crossing *Lælio-Cattleya* × *Schilleriana* and *C. Mossiæ*, and that record is the one generally followed. However, in the report of the meeting, which appeared in the *Gardeners' Chronicle*, the correct record as borne out by the features of the flower was given, see p. 334, September 21, 1889: "A hybrid *Cattleya* was shown by **Miss Harris**, of The Grange, Lamberhurst; this plant was the result of crossing *C. Schilleriana* and *C. Mossiæ*, the latter being the seed-bearer." The description further shows the connection between the original form and **Mr. Ashworth's**, though the latter is the larger and more richly coloured flower. Our supplementary illustration of *Cattleya* × *Miss Harris* var. *E. Ashworth* will therefore be of more than ordinary interest. As will be noticed, the outline of the flower follows closely that of *Cattleya Schilleriana*, and it also has the firm substance of that species. The brownish spotting usually seen on the sepals of *Cattleya Schilleriana* does not appear, the prevailing colour of the whole flower being of a bright rose-purple, the side-lobes of the lip showing some lighter colour between the purplish veining, and the front lobe having bright claret-purple veining on a rather lighter ground, the disc being yellow. The habit of the plant is dwarf, which makes the large flower the more striking.

HOME CORRESPONDENCE.

WEATHER LORE FOR MAY.—

"Water in May is bread all the year."

"Till May be out,
Cast not a clout."

"May showers bring milk and meal."

"A cold May and a windy,
Makes a barn full and a findy."

"A windy May makes a fair year."

"A leaking May and a warm June
Bring on the harvest very soon." *J. C.*

POLYANTHUSES.—As the examples of the gold-laced Polyanthuses presented for prizes offered at the Drill Hall each April become beautifully less, so in other directions do the superb border Polyanthuses expand. The Drill Hall effort to keep in existence samples of the unfittest may be meritorious, but the game seems, from a decorative or garden aspect, not to be worth the candle. I have just recently been visiting some very fine and most attractive collections—one at Hampton Court, the other at Farnham, Surrey. In the first place the plants are grouped in large beds, and are now blooming most admirably and effectively. There are, perhaps, some 3,000 to 4,000 of such plants, and it is a joy to an old grower of them to see how finely they are grown at this popular place of resort, and how greatly the flower-loving public, who flock there by tens of thousands, appreciate them. Even the poorest plants gives more to look at, from a mere decorative point of view, than do the best of gold-placed. The other show at Farnham is on **Mr. S. Mortimer's** garden at Rowledge, near the famous Hop town. There the plants run into some 10,000, and besides these, there are several thousands raised from a sowing made as soon as the seed was ripe last summer, the plants being grown on in shallow boxes, then dibbled out during the winter. These will make a grand show next spring. The old plants in full bloom presented, under the effects of strong wind the other day, a curious appearance, as the flowers all temporarily looked one way, and gave the appearance of myriads of tiny faces looking

to the sun. There were all sorts of colours, and such fine quality, that the sight was a specially delightful one to look upon and to enjoy. What possibilities there are in these strong-growing, early-blooming flowers! and even now they may be improved. They have helped to add quite a new charm to spring flower-gardening. *A. D.*

SAXIFRAGA BURSERIANA MAJOR.—This Saxifrage was very fine, even those plants that were divided last year immediately after flowering. I have often said that the non-flowering of these and other early alpine plants is due to the crowding of the rosettes forming the tuft, which being unable to develop, do not reach flowering size. It may also be that sooner or later these undeveloped rosettes become decayed to a greater or lesser degree in the central part of a tuft. At Hampton the plants are divided freely, and develop in a manner that renders decay impossible. All the rosettes already existing are enabled to make roots in fresh soil. My largest plants of *S. Burseriana* made three, and when I say that some plants so divided a year ago, were well nigh hidden in a 5-inch pot by their flowers, it shows that the plants had grown quickly and well. The best kind of soil for the plant is a very gritty loam, a small quantity of charcoal, much-spent manure, and potting as firmly as an *Erica* or an *Epacris*. I take care to press the plant well into the soil, and I consider no plant finished until some of the fine soil has been well rubbed into the tuft. Then by subsequent waterings it is carried down, and affords fresh food for the growing rosettes. Overhead covering I consider bad, and frequently most harmful to these plants; wet is kept off, and the worst enemies of the plant encouraged. *E. Jenkins*.

FIG WITH ABNORMAL STALK.—The Fig which I send for your inspection, one of second crop, is taken from a tree which produces exactly the same kind of fruits each year. The first crop Figs are perfect in every respect. The tree is planted in the usual kind of soil employed in growing the Fig, in a bed measuring 4 feet by $3\frac{1}{2}$ feet by 3 feet, and it is perfectly healthy. The first crop of fruits was in every respect a good one. I should be glad to know if any of your readers have met with a similar instance of malformation annually repeated. *T. C.*

THE REMOVAL OF INCRUSTATION FROM GARDEN BOILERS.—As the season for doing this very important bit of work is at hand, a word or two upon the subject may be of use and interest to many of the readers of this journal. Of course, where rain-water can be used, little anxiety need be felt as to the state of the boiler beyond an ordinary washing out annually; but as there are many gardens supplied with hard water only, it becomes absolutely necessary to inspect the boilers, and if incrustation be found, I have recourse to some anti-incrustation compound as a means of removing the stony deposit on the surface of the boiler-plates. During the last few years I have used a composition which has proved efficient, the particulars concerning which I shall be pleased to give to anyone applying to me. *E. Burbury, Castle Gardens, Arundel.*

THE SPARROWS AGAIN AND AGAIN.—

"Great is the hurt that is chanced by ignorance."
Plato.

"A. D." is scarcely right when he says "the house sparrow, since it has become the pet and protégé of County Councils, seems to regard the Polyanthus and Primrose as special delicacies, &c." This is not since, for it has always been so. More than forty years ago, I had a large number of the varieties of Primrose, large clumps of them, and full of bloom. One morning, on going to admire them, I found thousands of flowers and buds strewn around and about my plants. So I watched for the cause, and had waited only a short time when a number of sparrows came, and hopping on to, around, and about, began to denude my plants not only of the flowers, but of buds, stalks, and stems also. They never attempted to eat any, but picked them off and threw them down in sheer mischief. Some years they will so destroy whole lines of thousands of yellow Crocus, at others eat off "the grass" of the Pinks and Carnations (as they have mine this year), picking out the very heart and life of each shoot. As to Gooseberry-buds, the blossoming ones, I have found that the sparrow will soon make these conspicuously fewer in number. Somewhere I have a copy of the accounts of the church-

wardens of a church in Kent. It is of the seventeenth century, and therein is set forth numerous sums paid at various times for the death of "so many dozens of sparrows." So from this it is perfectly clear that our forefathers did not set so high an estimate on their usefulness as do the so-called humanitarians of the present time. No one is more in favour of humanity than myself, but there is a wide difference between a humane person and modern humanitarians. These latter are ignorant of the habits and food of some animals and birds, attribute to them not only useful properties

fresh loveliness awakened some of my tenderest thoughts, and carried my old life back to my childhood days. What ruthless hand could have wrought such havoc? None. It was the fine utility bird "the sparrow." Words fail me! And, says that nondescript individual, the offspring of Ignorance and Notoriety, "It is the gardener's friend." If so, then I must exclaim in that oft-heard, though generally applicable, yet much-hackneyed phrase, "Save! oh save us from our friends." *Harrison Weir, Poplar Hall, Appledore, Kent.*

ENQUIRY.

WILL some of our readers kindly answer the following query of W. D'Sirl?—"Is it usual at this time of the year for moles to change colour? for within the last six weeks three moles have been caught here (Denham, Uxbridge) that have been white, or nearly white, the last one, caught last week, being whiter than either, the only marking being underneath the body, from between the front feet to the hind ones, nearly coffee-coloured."

NURSERY NOTES.

RADISHES—AND RADISHES.

WHEN Messrs. Sutton & Sons invited us recently to go to Reading to see the result of "200 trials of Radishes," it seemed to offer an excellent illustration of the thoroughness in which the art of horticulture is now practised in this country. It is not uncommon for us to be asked to inspect at some of our best known nurseries, several hundred trials of Peas, or extensive trials of Potatoes; but of Radishes, that certainly do not occupy such a position in the national food as do Potatoes or Peas, we should not have imagined so much. It is the seedsman's business, however, to take care that he has the best obtainable strains or varieties of every kind, and there is apparently as much specialisation in respect to the humble Radish as in seemingly more important vegetables. Whilst the man in the street probably recognises two kinds only, the round or Turnip-rooted Radish, and the "frame" or long-rooted Radish, the gardener knows there are intermediate forms, as the ovals, &c.; and he knows also that strains and varieties differ very much in the colour of the roots, and in the period they require to mature. He can obtain a long-rooting Radish, white or red; Turnip and oval-rooting varieties, white, red, or yellow, or red with white tips, and varieties that mature early or late. To keep all these strains as pure as possible, that the purchaser may not find many rogues in colour or form amongst his crop of a particular variety, necessitates frequent trials; but rarely is there one so complete as that we had recently the opportunity to inspect.

A hot-bed was formed out in the open, the bed of manure being about 2 feet high, and over this a good layer of fairly rich loamy soil was placed. The seeds of all the 200 rows were sown in this mould on March 4 last, and nets and canvas coverings were used when required, but chiefly on cold nights. There was an improvised framework that supported the covering some little distance above the crop. Had the weather been more seasonable, the roots would have been ready for the table much earlier; but as it was, they were in best condition for comparison on April 27.

It must not be imagined that all of these trials in separate rows represented different varieties; they did not, as there were half-a-dozen rows of the same variety in some cases, but each was from a different "parcel" of seed, and some proved to be merely duplicates of a known variety, but bearing a new name.

Taking the whole series, the best forcing Radish that we saw is Earliest-of-All, and it has bright rose-coloured, round roots. It reaches maturity before the plants have made more than two or three small leaves, and may therefore be sown more thickly than ordinary Radishes. Red Forcing has rather a stronger top, but of those having a deep red-coloured root, is earliest. There was also a very good Continental strain similar to this. White Forcing makes very little top before the roots are fit for table.

Other good Turnip-shaped varieties were Large Crimson, Early Scarlet, Red White-tipped, which must not be confounded with the ordinary rose-



FIG. 113.—SARMIENTA REPENS: COLOUR OF THE FLOWERS BRIGHT RED.

which they do not possess, but they ignore and too often entirely deny any mischief that they do. The sparrow is one of these, so upheld as the farmers, fruit-growers, and gardeners' friend, whereas it is "a perfect pest." But the other day here, in a sheltered nook in my garden, I was delighting in the contemplation of some clumps of Primroses in full bloom. There amid the bright green young leaves peeped forth beautiful yellow flowers, a charming sight. To-day I thought I would go again and gladden my life by another sight of them, when to my horror there laid about every blossom, and fair young buds, and nothing but stems, bare and naked, upstanding, or broken, where so late there glowed arrayed in light flowers that in their

SARMIENTA REPENS.

OUR illustration (fig. 113) is a pretty little scandent or trailing Gesneriad, with small, opposite, fleshy leaves. The pendulous flowers are on long, slender stalks. The corolla is about an inch long, bright scarlet, tubular at the base, dilated in the middle, and contracted at the throat into a short five-lobed limb. It is a native of Chile, whence it was introduced by Messrs. Veitch. A coloured figure will be found in the *Botanical Magazine*, t. 6720. It was shown lately before the Royal Horticultural Society by Mr. Godman.

coloured strain with white tip; and a round form with yellow-coloured roots. Among the oval-rooted varieties, the best were the following:—Gem, a white-tipped, rose-coloured variety, that matures quickly; Forcing Carmine, Crimson Forcing, with tankard-shaped roots; Forcing White Olive, which is earlier, and produces a smaller top than White Olive; Golden Olive, for which, perhaps, there is not a large demand; and a variety with fern-like foliage, interesting as an instance of variation, but of no special value, as the root rather than the top is the part used.

Of the "French breakfast" type, there were, in addition to the ordinary strain with rose-coloured roots, white tipped, one called Crimson F. B., from the roots being of that colour; and Forcing F. B., which matures earlier than the crimson variety, and is very bright in colour, with smaller leaves. Scarlet Globe is the name of a variety with roots neither like the Turnip nor the oval type, but is betwixt the two; it is very attractive in colour.

The remaining type of Radish, the "frame," or long rooted, was represented by several varieties that had come exceedingly uniform. First, there was Wood's Frame, than which none is better known; and Earliest Frame, a selected variety of Messrs. Sutton—it is earlier to mature, the roots are of deeper colour, and of better shape, being about the same thickness throughout the length. Then there was the Long Scarlet, Long White, and the most attractive of the long-rooted varieties, "The Sutton," a scarlet root with white tip. There were rows also of mixed varieties of each of the three round, oval, and long-rooting types, all of which were satisfactory.

It is interesting to add, that notwithstanding the differences there are in form, colour, and maturing qualities in Radishes, Messrs. Sutton have failed to find any variety that possesses an appreciable distinctness in flavour, although at the same time tenderness of flesh and delicacy of flavour are found in proportion as varieties are quick-growing or otherwise.

Obituary.

WILLIAM THOMSON.—This well-known nurseryman, whose death was briefly announced in our last issue, was a member of the firm of William Thomson & Sons, Limited, Tweed Vineyard, Galashiels. He was forty-nine years of age when he succumbed to a long and painful illness on April 27, leaving a widow and one child. His removal is very much regretted, and will be missed by a wide circle of friends, by whom he was known as a man of a kindly and helpful disposition. All who knew him intimately in business matters found him most upright and conscientious; and he was a man with clear perception, who could grasp at once the chief points of any matter brought to his notice, and very correct and efficient in all his business relationships. He received his horticultural training under his father, of whom it may be said he was an expert in most matters, and more especially in the management of the Grape-vine. He will be much missed in the parish in which he lived, having rendered it good service as a member of the School Board and Parish Council.

MICHAEL DAVIS.—Many readers of the *Gardeners' Chronicle* will be sorry to hear of the somewhat sudden death of this well-known and respected gardener, which took place at "Manresa," Roehampton, on May 3. The late Mr. Davis, though brought up in an agricultural environment, soon showed a desire for gardening. He was apprenticed at an early age in the gardens of Sir Roger Palmer of Kennure Park, where he devoted himself assiduously to acquiring a knowledge of the profession he had chosen. At Arundel Castle, Sussex, he first served as journeyman, and of this place he often spoke in later years. Leaving Arundel, deceased removed to the neighbourhood in which he

died, viz., Granard House, Putney Park Lane, Roehampton, then in the possession of Lady Webster. His appointment as head gardener at Manresa followed soon afterwards, and here for nearly forty years he has filled that position ably. Soon after settling at Manresa, Mr. Davis planted the now famous Black Hamburgh Vine, of which he was justly proud. This giant Vine was visited by hundreds of visitors yearly, and it brought Mr. Davis into touch with many of the leading horticulturists of the day, besides others interested in such matters; consequently, to know the Vine was to know the man who planted it, and many on reading these lines will remember the genial and affable manner in which deceased welcomed them, for his cheery greeting was alike to all. Being of a naturally quiet and retiring manner, Mr. Davis rarely went abroad amongst his brother gardeners, excepting his immediate neighbours, by whom he was held in the highest esteem, and to whose practical advice many young men have been much indebted.

He died at the age of 64 years, and is survived by a widow, two daughters, and two sons, one of whom succeeds to the management of the Manresa Gardens. The interment was at Mortlake Cemetery, on Tuesday last, and the large and representative gathering there assembled, and the profusion of floral tributes testified to the very high esteem in which our late friend was held. *J. F. McLeod, Roehampton.*

BOOK NOTICE.

DIE FLORA DER DEUTSCHEN SCHUTZGEBIETE IN DER SÜDSEE. Von Prof. Dr. K. Schumann und Dr. K. Lauterbach, Mit einer Karte, und 22, Tafeln sowie einer Doppeltafel, Leipzig, Gebr. Bornträger, 1901; 40 Mark, xvi. 613 pp., 8vo.

THERE are few regions in the world which have given to our gardens such a rich collection of decorative plants in the last half century as New Guinea and the neighbouring islands in the South Seas. A close study of the flora of that region shows that there are still a great many plants which are, though detected by science, still awaiting introduction to our gardens. In the above cited work are enumerated no fewer than 225 Ferns, two Cycads, amongst these latter a new species allied to *Cycas circinalis*, eighteen Screw-Pines, thirty-four Palms, amongst these one new genus of the affinity of *Licuala* (*Dammera*) with two species, and fifteen other new species; thirty-two *Araceæ*, and ninety-three Orchids. If we remember what beautiful plants we have already obtained from this region, for example, the so-called Croton (*Codiaeum pictum*), the *Celosia cristata*, &c., it is to be wished that a collector should go there to bring into our gardens further jewels of that interesting flora. I will mention out of the large number only some species: *Macropychanthus Lauterbachii*, Harms, a species of a new genus of the *Leguminosæ*. This tall climber has panicles 25 cm. (9 inches) long, which bear flowers of a bright cobalt blue and dark violet, the vexillum dark violet, 8 cm. long, and 3 cm. broad, the blue alae 7½ cm. long, and the blue carina 7 cm. long. What gardener would not like to have this plant in his collection as a fine pendant to the *Hexacentris mysorensis*. Amongst the *Zingiberaceæ* may be mentioned the different species of *Tapeinochilus*, *T. densus*, Sch. & L., with flower-spikes more than 30 cm. by more than 15 cm. in diameter, with red bracts and yellow flowers. Of the Palms the new *Drymophloeus montanus*, with leaves more than 2 cm. long, and pinnules of 37 cm. long, and 12.5 cm. broad, may be mentioned. The stem of this Palm attains a height of 2 metres by 6 cm. in diameter. All those who are interested in the flora of New Guinea should consult this volume, which is the first complete enumeration of the flora of that region. *Dr. Damm.*

SOCIETIES.

ROYAL HORTICULTURAL.

MAY 7.—There was another crowded meeting at the Drill Hall, Buckingham Gate, Westminster, on the above date, some of the exhibitors being unable to stage all that they had brought.

The FLORAL COMMITTEE had before it an extraordinary number of groups, in respect of which was awarded the unusual number of twenty-two medals. One of the most remarkable of these was a group of yellow-flowered Callas from Lord ROTHSCHILD.

Novelties were not of special remark, excepting perhaps a mule Pink, raised from crossing a Sweet William with Uriah Pike Carnation. To this plant an Award of Merit was recommended; also to an alpine *Auricula*, a white-leaved *Borecole*, a bunch Primrose, and to two Tulips.

Orchids made a very fine display, and the ORCHID COMMITTEE recommended awards, including one Botanical Certificate, five First-class Certificates, and seven Awards of Merit.

The NARCISSUS COMMITTEE held its last meeting for the present season, and there was a larger number of flowers staged than at any previous meeting. The Committee's awards included two First class Certificates and nine Awards of Merit.

The FRUIT AND VEGETABLE COMMITTEE had before it a fine exhibit of fruit from Messrs. JAS. VEITCH & SONS, Ltd., Chelsea. Messrs. CANNELL, Swanley, had growing Peas, and there were several other exhibits, but no award was made to a novelty.

In the afternoon about sixty new Fellows were elected.

Sir TREVOR LAWRENCE (President) presented Victoria Medals of Honour in Horticulture to Miss Ormerod, Sir Geo. King, Mr. Geo. Norman, and Mr. Jas. Sweet. Also Veitch Memorial Medals (awarded by the Veitch Memorial Trustees) to Mr. Latham (Birmingham Botanic Gardens), Mr. Lynch (Cambridge Botanic Gardens), and Mr. Meehan (Philadelphia).

When this business had been done, a LECTURE upon "Wall Gardening" was read by Mr. E. H. JENKINS.

Floral Committee.

Present: W. Marshall, Esq., Chairman; and Messrs. H. B. M. y, R. Dean, John Jennings, W. Howe, C. R. Fielder Chas. Dixon, J. Fraser, H. J. Cutbush, R. C. Notcutt, C. E. Pearson, C. E. Shea, J. H. Fitt, H. P. Thomson, E. H. Jenkins, C. Blick, Geo. Paul, Chas. T. Druey, H. J. Jones, F. Page-Roberts (Rev.), Chas. Jeffries, and E. T. Cook.

Messrs. W. PAUL & SON, Waltham Cross Nurseries, Herts, in a group of Roses and other plants, exhibited half-a-dozen plants of a new climbing Rose named Field Marshal, with a habit like that of some of the best climbing Teas, and first-rate bright crimson flowers. There were fine dwarf plants of *Euchantress*, with white or pale-tinted flowers; Victor Verdier White Lady, Duke of Edinburgh, &c.; also cut blooms of many varieties, and *Pyrus Niedzwetzkyana*, a branch of which was also shown, had single flowers of dark crimson colour, and purple foliage (Silver Banksian Medal).

Messrs. J. CHEAL & SONS, Lowfield Nurseries, Crawley, Sussex, had a fine group of sprays of flowering shrubs, *Pyrus japonica*, *P. Malus floribunda*, and others; the beautiful white-flowered *Exochorda grandiflora*, also *Ribes aureum*, *Amelanchier botryapium*, *Berberis Darwini*, *B. Thunbergi*, *Genista aphylla*, the blue-flowered *Ceanothus divaricatus*, *Spirea arguta* multiflora, *S. prunifolia* plena, &c. (Silver Banksian Medal).

Mr. H. J. JONES, Ryecroft Nursery, Hither Green, Lewisham, again made a gorgeous display with bulbous flowers, showing Tulips and Narcissus in great variety and excellent condition (Bronze Flora Medal).

Messrs. B. S. WILLIAMS & SON, Victoria and Paradise Nurseries, Upper Holloway, London, N., showed a group of choice stove plants, including *Codiaeums*, *Warreni*, *superba*, *Massangeana*, *Lady Zetland*, *Weismanni superbum*, &c. *Dracena Godseffiana*, *Pandanus Veitchii*, *Calamus cilicaris*, and other choice Palms, *Rhopala cordovadensis*, a noble looking plant, uncommon in private gardens; *Aralias*, &c.

From Messrs. PAUL & SON, The Old Nurseries, Cheshunt, came a large plant, lifted from the open ground, of *Pyrus Malus floribunda*, and a variety having deeply-coloured flowers when fully expanded, and known as *atro-sanguinea*; *Amygdalus nana rosea*, and alba; *Cydonia japonica rosea*, a new double Cherry (*Cerasus avium fl.-pl.*), with white flowers; several very pretty purple-leaved *Acers*, and a number of dwarf Rose-trees in pots, including the varieties Lady Battersea, a very bright-coloured H.T.; and Mrs. Cocker, a H.P. with soft pink flowers of fine merit. A few alpine plants in flower were also shown from Cheshunt (Bronze Flora Medal).

One of the finest groups of yellow-flowered Callas we have seen was exhibited by Lord ROTHSCHILD, Tring Park, Tring

(gr., Mr. Hill). The plants were finely grown from seeds, and there was an unusual number of spathes, differing from each other in the richness of their colour; *Richardia Pentlandii*, and *R. Elliottiana*, were both represented grandly (Silver-gilt Flora Medal).

Some very strong-growing plants of *Hippeastrum* were shown from the gardens of WILBERFORCE BRYANT, Esq., Stoke Park, Slough (gr., Mr. Kemp). Some of the plants were in very large pots indeed, bearing nine or ten huge flower-spikes. The varieties were of the type common in gardens (Silver Banksian Medal).

Seeding *Hippeastrums* were shown from the Director, Royal Gardens, Kew. The plants had been raised from seeds sown in May, 1899, and were flowering very strongly and well; all of the flowers were self-coloured, and were crimson or scarlet, their form being excellent.

Cinerarias from Messrs. J. CARTER & CO., High Holborn, London, made a very imposing feature in the centre of the hall, where the plants were staged upon pots on the floor. They were of the strain known as *stellata*, and for the purposes for which this strain is most useful, were a good type, though it might be objected that some of the plants were taller in growth than is desirable. A smaller group of double-flowered varieties showed very good cultivation, and carried fine heads of bloom (Silver Flora Medal).

Mr. H. CANNELL & SONS, Swanley, Kent, exhibited a group of cut flowers of decorative and regal Pelargoniums, which represented a large number of excellent varieties.

Messrs. STORRIE & STORRIE, Dundee, and Glencarse, N.B., showed some exceedingly fine plants of strains of *Polyanthus*, with most brilliantly coloured flowers, and extraordinary growth. There were gold, grey, and silver-leaved types, Giant Hose-in-Hose from richest yellow to palest primrose, Giant crimson, yellow, purple, rose, and white; and Giant Cowslips in a variety of colours (Bronze Flora Medal).

Messrs. R. WALLACE & CO., Kilnfield Gardens, Colchester, showed a mixed collection of alpine, bulbous, and bog plants. We observed a nice potful of *Scilla campanulata* excelsior with pale blue-coloured flowers, and *S. c. alba*, *Trillium grandiflorum*, the very dark flowered *Muscari paradoxum*, with a "bloom," the flowers on it like that on a black Grape; *Geum montanum*, a dwarf growing species, with bright yellow flowers; and *G. Heldreichii*, with orange-scarlet flowers; *Aquilegia Stuarti*, blue and white flowers; *Arabis alba flore-pleno*, a great improvement on the type, flower being very double, and the spikes dense; several Tulips, including *elegans* and *variegata*; *Fritillaria Elwesii*, a species with green flowers, having brown spots and stripes upon them; *Fritillaria recurva*, bright red flowers with splashes of yellow, very free to flower; *Gerbera Jamesoni*; *Muscari conicum*, flowers of a bright dark blue colour; *Cypripedium calceolus*, *Iris flavescens stellata*, having white flowers. A most interesting group (Silver Banksian Medal).

Messrs. W. CUTBUSH & SON, Nurseries, Highbgate Hill, N., showed a new border Carnation named Herbert J. Cutbush, a flower of brilliant crimson, large and very full, and apparently very free to bloom; the firm showed also a number of plants of *Richardia Elliottiana*, with one flower each (Bronze Flora Medal).

Messrs. HOGG & ROBERTSON, 22, Mary Street, Dublin, and Rush, Co. Dublin, showed a considerable quantity of cut blooms of Tulips of Irish growth, including Darwin (breeder, unbroken Tulips), *T. variegata*, *T. cornuta*, *T. perfecta*, *T. elegans alba*, *T. viridiflora*, *T. retroflexa*, and *T. Greigi*. La Grandesse is a grand flesh-coloured double flower. Single-flowered florists' Tulips were excellent, and in great variety. We noted Rachel Ruisch, white and rose; Princess Ida, yellow and white, very distinct; *Epaminondas*, a well-known variety; Grand Duke of Russia, a rosy-red byblomen, and there were many more equally good, and in great variety (Silver Banksian Medal).

Mr. FRITCHARD, nurseryman, Chistchurch, Hants, showed largely hardy plants of the choicer species and varieties. There were *Arabis Corbeille d'Argent*, double flowered and vigorous; several *Iris*, as *I. nudicaule*, with deep blue-coloured flowers; *I. lutescens* var. *Stellata*, white; *I. pumila attica*, yellow; *I. p. violacea*, *I. Hungarica*, with purple blooms. A great mass of *Phlox canadensis*, the lilac-blue flowers of which are showy and distinct. Among the other plants were *Carex prolifera variegata*, an almost white foliage; *Ranunculus amplexicaulis*, *Mertensia virginica*, a nicely flowered example; *Olearia stellata*, *Epimediums*, including *E. macranthum*, *Centaurea montana alba*, *Vinca herbacea*, with dark blue flowers; *Erodium hymenoides*, *Camassia Cusicki*, a plant with tall spikes of light blue flowers; *Polemonium reptans*, &c. (Silver Banksian Medal).

Mr. H. B. MAY, Dysons Lane Nurseries, Upper Edmonton, covered a considerable amount of tabling with *Polyanthus* Primroses, with *Coleus* in variety, with *Statice imbricata*, well in flower; *Pteris Wimsetti* major, *Vitis hemisphaerica variegata*, zonal Pelargonium Decorator, a massive semi-double flower, of bright scarlet, very big compact corymbs, strong flower-

stalks, and generally growth vigorous; *Hermione*, less strong in growth, with neat, compact trusses of white flowers; King of Denmark, salmon-pink, compact, strong trusses, mounted upon long flower stalks; Achievement, deep cerise-coloured flower, semi double, and the trusses of large size; *Pteris albo-lineata* Alexandra, and *Nepeta variegata* (Silver Banksian Medal).

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, Chelsea, exhibited plants in flower of *Eriostemon pulchellus* and *E. densifolius*, also the lovely *Tetratheca hirsuta*, which is much too seldom seen in gardens; and *Veronica Hulseana*, with pale lavender-coloured flowers, growing about 3 feet high.

Dracena Parrei was also from Messrs. VEITCH. It was an excellent plant 4 feet high, and growing in a tub. It has long green leaves 2 inches wide, with a reddish band along the centre on the exterior side. A very noble decorative plant.

Messrs. JAS. VEITCH & SONS had also a group of bulbous flowers, comprising *Narcissus*, several species of *Fritillary*, Tulips, &c. (Silver-gilt Flora Medal).

Rhododendron (Azalea) molle var. *Hollandia*, with rather dense, yellow-coloured flowers, was shown by Mr. K. DROST, Kew Nursery, Richmond, but it was not superior to many forms of this useful *Rhododendron*, though it has many attractions.

Messrs. H. YOUNG & SONS Pansy Nurseries, Windmill Lane, Cheshunt, showed a fine lot of Pansies and Violas lifted from the open ground.

The Hon. JOHN BOSCAWEN, Tregye, Cornwall, showed several varieties of *Cytisus*, and also *Coronilla glauca*, which had flowered in the open.

Messrs. H. LOW & CO., Bush Hill Nurseries, Enfield, again exhibited a fine lot of plants of *Schizanthus Wisetonensis*, and two plants of *Carnation Mrs. Thos. W. Lawson*. As shown on this occasion, the flowers were of good, distinct colour, of considerable size, and very faintly fragrant; but they possessed little refinement.

Messrs. FRANK CANT & CO., Braiswick Nurseries, Colchester, exhibited four dozen blooms of *Roses* in much variety, besides several fine bunches of garden varieties (Silver Banksian Medal).

Messrs. B. R. CANT & SONS, Colchester, exhibited a group of Rose-trees in pots, capital plants of dwarf proportions, and bearing fine foliage and brilliant blossoms. Mrs. Sharman Crawford, Captain Hayward, Antoine Rivoire, Mrs. John Laing, &c., were exceedingly good (Silver-gilt Banksian Medal).

Mr. PERCY R. DUNN, Brockley Park, London, S.E., showed a group of plants of herbaceous *Calceolarias* (Bronze Banksian Medal).

Mr. JOHN RUSSELL, Kew Road Nurseries, Richmond, Surrey, exhibited a beautiful group of Japanese *Acers*. Not only were the plants well cultivated, but they represented a very large number of varieties of these graceful Maples.

Messrs. JOHN LAING & SONS, Forest Hill Nurseries, London, S.E., also had a group containing *Acers*, and it included also *Vitis Coignetii*, *Sambucus plumosus aureus*, *Crataegus chrysophylla*, &c.

Messrs. JOHN FEED & SON, Norwood Road, West Norwood, London, S.E., had a collection of alpine plants, staged amidst stones and pieces of cork, &c. In flower were *Phloxes*, *Iberis*, *Arnebia echioides*, *Saxifragas*, &c.

Messrs. GEO. JACKMAN & SON, Woking Nursery, Surrey, exhibited a collection of hardy plants in flower, including *Ramondia pyrenaica*, *Geum montanum*, *Phlox Ilacina*, excellent specimens of *Orchis maculata superba*, *Incarvillea Delavayi*, *Orchis bifolia*, *Heuchera rosea*, *Dielis spectabilis*, *Geothra speciosa rosea*, &c. (Bronze Flora Medal).

Mr. THOS. S. WARE, LTD., Hale Farm Nurseries, Feltham, made a very pretty display of hardy plants in flower, especially of varieties of *Primula Sieboldii*. One of the handsomest varieties was one called *Nellie Ware*, having a white centre. *Lilacina marginata*, *alba magnifica*, Mrs. Ryder, very pale pink, nearly white; *Ruby Queen violacea*, &c., were all shown well. *Iris Susanne* was well shown, and *I. Eggeri*, a new species; also a great variety of other hardy plants (Silver Banksian Medal).

Mr. AMOS PERRY, Hardy Plant Nursery, Winchmore Hill, London, exhibited hardy plants including *Geum Heldreichii*, in very fine condition; *Muscari conicum* "Heavenly Blue," *Euphorbia polychroma*, several *Iris*s, the double flowered *Iberis*, the scarlet Tulipa *Greigii*, *Ramondia Nodulata*, a new species of exceedingly free-flowering character that is very promising, &c. (Silver Banksian Medal).

Auriculas were again in evidence, Mr. C. TURNER, of the Royal Nurseries, Slough, exhibiting a fine collection of Alpine varieties, including about seventy plants. To one of these was recommended an Award of Merit (Silver Flora Medal).

Messrs. BARR & SONS, King Street, Covent Garden, London, W.C., exhibited a group of Darwin Tulips, *Narcissus*, &c. (Silver Banksian Medal).

Awards of Merit.

Alpine Auricula Leonora.—Colour violet-purple, with white centre. From Mr. C. Turner, Slough.

Borecole "Albino".—This is an exceedingly ornamental variety of *Borecole*. The plants shown were running to seed, but the smaller leaves were still much variegated, some of them being nearly white. The exhibitors said of this variety:—"The plants retain their purity and character in every leaf and bract of the floral axis. This characteristic is quite constant, and the strain is so fixed that 95 per cent of the plants come near to the standard of purity and quality of those exhibited." It was shown by Messrs. STORRIE & STORRIE, Dundee.

Bunch Primrose "Sultan".—This variety has rich yellow flowers, with apricot-tinted centre. The remarkably strong plants exhibited, bore flowers 2 inches across, and the trusses were very strong. From Miss JERVELL, V.M.H., Munstead Wood, Godalming.

Mule Pink "Lady Dixon".—This is a capital mule Pink for the flower border. It was obtained from a cross between a Sweet William, which was the seed parent, and *Uriah Pike Carnation*. The flowers are very double, nearly 2 inches across, and rosy-crimson in colour. The inflorescence is much branched, and seems to indicate a very free flowering habit. From Mr. P. D. WILLIAMS, Lanarth.

Tulip "Branhilde".—A large, white, cup-shaped single flower, with soft yellow base, and segments flushed with the same colour. From Messrs. BARR & SONS.

Tulip "William III."—A double or semi-double variety having very bright rosy-crimson flowers, with yellow centre. From Messrs. BARR & SONS.

Orchid Committee.

Present: J. Gurney Fowler, Esq., in the Chair; Messrs. de B. Crawshaw, W. H. White, H. Little, H. A. Tracy, H. J. Chapman, W. H. Young, F. J. Thorne, H. T. Pitt, E. Ashworth, T. W. Bond, F. A. Rehder, J. W. Odell, W. Cobb, J. Douglas, H. Ballantine, W. A. Bitney, W. B. Latham, and Jas. O'Brien (Hon. Sec.).

Again there was a very fine show of Orchids, the *Odontoglossums* being specially good. The highest award, a Silver-gilt Flora Medal, was secured by J. LEEMANN, Esq., of Heaton Mersey (gr., Mr. A. Edge) for a splendid group, consisting principally of *Odontoglossums*, among which, in addition to the three mentioned in the list of awards, were the finely coloured *O. crispum* "Mrs. J. Leemann," with petals and sepals very heavily marked with red-brown; *O. c. Ruby*, with large ruby-purple blotches; and many other fine white and spotted varieties; *O. triumphans* "Golden King," in two shades of yellow; several good *O. x Adriane*, and *O. Halii*; *O. x Ruckerianum elegans*, and other hybrids. Also in the group were three good examples of *Laelio-Cattleya x Digbyano-Mendeli* "Imperatrice de Russie," *L.-C. x Martenelli*, *L.-C. x Hyeania*; *Laelia x Mozart* (*Boothiana x tenebrosa*), and other hybrid *Laelias*, &c.; *Cattleya Skinneri alba*, and *C. Lawrenceana*. At the back of the group there were fine examples of *Oncidium Marshallianum*, and others of elegant habit, the whole being well grown and flowered.

H. T. PITT, Esq., Rosslyn, Stamford Hill (gr., Mr. Thurgood), had a fine group for which a Silver Flora Medal was awarded. The features in it were the fine *Odontoglossums*, and varieties of *Cattleya Schroderae*. Of the former, prominent were *O. Pescatorei Pittianum*, fine blotched with violet purple; *O. x Ruckerianum* "Rosslyn variety," large and evenly spotted with purple; some very good forms of *O. crispum*, both spotted and white; equally fine *O. Hallii*, *O. triumphans*, and *O. citreum*. The *Cattleya Schroderae* included two fine forms with purple blotches on the lip, and the charming *C. S. Heatonensis*. Other fine things remarked were *Oncidium amphium majus*, *Cattleya Skinneri alba*, *Laelia purpurata*, and *L. xanthina*; *Epiphrontis x Veitchii*, *Cypripedium Lawrenceanum Hyeanum*, and other *Cypripediums*.

DE BARRI CRAWSHAW, Esq., Rosefield, Sevenoaks (gr., M. Stables), was awarded a Silver Flora Medal for an effective group of remarkably fine *Odontoglossums*, one of the typical form bearing a spike with two large seed capsules and an inflorescence of twelve large flowers. The plant remaining plump and vigorous, gave a good proof of high culture. Among others in the group were two examples of what is called the "Starlight" section of *O. crispum*, and other handsome forms; the fine *O. x Anderssonianum* "Raymond Crawshaw," *O. x A. "Theodora"*, a very fine, heavily blotched variety, and others, all finely grown.

Messrs. JAS. VEITCH & SONS, Chelsea, staged an effective group, at the back of which had been placed tall examples of *Oncidium Marshallianum*, *Cymbidium Lowianum*, *C. x eburneo-Lowianum*, and the fine old type of *Cymbidium eburneum*, *Epilobium x Endresii Wallisii*, *E. x elgatum*, and its yellow variety, *luteum*. In the centre was a group of excellent varieties of *Cattleya Schroderae*; at one end a batch of the orange and purple *Laelia x Latona*, and at

the other a batch of *Masdevallia Veitchii*. Also noted in the group were *Spathoglottis* × *aureo-Viellardii*, *Laelio-Cattleya* × *Hyeana*, L.C. × G. S. Ball, some fine *Odontoglossum crispum*, &c.

Messrs. HUGH LOW & Co., Bush Hill Park, staged a group in the centre of which was a fine specimen of *Cattleya Skinneri*. With it were good varieties of *Cattleya Schroderae*, *Dendrobium thyrsiflorum*, *D. Devonianum*, *D. × Nestor*, *Oncidium concolor*, *Bifrenaria Harrisoniae* *eburnea*, *Epidendrum Stamfordianum*, and other showy species.

W. W. MANN, Esq., Bexley, showed *Odontoglossum crispum* *Mannianum*, a fine flower with a large blotch in each segment.

R. G. THWAITES, Esq., Streatham (gr., Mr. Black), showed *Odontoglossum* × *Wilckeanum* *Thwaitesianum*, a singular form with nearly white flowers.

Col. SHIPWAY, Chiswick (gr., Mr. Walters), sent *Laelia purpurata* *Russelliana* variety.

Baron Sir H. SCHRODER, The Dell, Staines (gr., Mr. H. Ballantine), showed a spike of the fine *Cymbidium pendulum atropurpureum* (*Botanical Magazine*, t. 5710), with claret-purple sepals and petals, and white lip with rose-purple blotches.

FRANK A. REHOER, Esq., Gipsy Hill (gr., Mr. Norris), sent *Dendrobium Wardianum* *aureum* with yellow sepals and petals.

WALTER COBB, Esq., Tunbridge Wells (gr., Mr. J. Howes), showed fine forms of *Odontoglossum* × *Adrianæ*.

FRAU IDA BRANDT, Zurich (gr., Mr. Schlecht), sent *Oncidium stramineum* and *Brassia maculata*.

R. BROOMAN-WHITE, Esq., Arddarroch (gr., Mr. Cole), sent a fine *Odontoglossum* × *Andersonianum*.

Captain HOLFORD, Westonbirt, Tetbury (gr., Mr. A. Chapman), showed *Sophro-Laelia* × *Leta* var. *Orpetiana* (*L. pumila* × *S. grandiflorum*), with pretty carmine-crimson flower.

Sir TREVOR LAWRENCE, Bart. (gr., Mr. W. H. White), sent a fine specimen of *Dendrobium* × *Euterpa*.

Mr. T. ROCHFORD, Tarnford Hall Nurseries, showed *Odontoglossum crispum* *mirabile*, *O. c. guttatum* "Rochford's variety," and the handsomely blotched *O. c. Turnfordianum*; also *Cattleya Mendeli* "Turnford Hall variety," with a finely formed light-coloured flower.

J. GURNEY FOWLER, Esq., Glebelands, S. Woodford (gr., Mr. J. Davis), showed *Dendrobium macrophyllum* "Glebelands variety."

FRANK W. MASON, Esq., The Firs, Warwick, showed three good forms of *Cattleya Mendeli*.

Major JOICEY, Sunningdale Park (gr., Mr. F. J. Thorne), sent *Dendrobium macrophyllum*, and a grand specimen of *Diacrium bicornutum*, with many spikes of pure white flowers.

Awards.

FIRST-CLASS CERTIFICATE.

Laelio-Cattleya × *Diabyano-Mendeli*, "Tring Park variety," from the Hon. Walter Rothschild, M.P.—A noble flower, much larger than the original form, shown as "Imperatrice de Russie." Flowers white, beautifully tinged with rose-pink. Lip heavily fringed.

Odontoglossum Halli "Edward VII.," from H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr., Mr. Thurgood)—This was pronounced to be the finest *O. Halli* yet flowered. Flowers large and broad in all its parts, the sepals of a dark chocolate, except the tips and some slight markings at the base, which were yellow. Petals yellow, spotted with dark chocolate-colour. Lip broad, white spotted purple, and bearing a wonderfully developed yellow crest.

Cattleya Schroderae *Heatonensis*, from H. T. Pitt, Esq.—A charming and delicately-tinted flower of a pale lilac colour, the centre being primrose-yellow. Lip and petals finely crimped.

Odontoglossum × *Adrianæ* *Cobbianum*, from WALTER COBB, Esq., Tunbridge Wells (gr., Mr. J. Howes).—The darkest form yet exhibited, the greater part of the flower being of a dark chestnut-brown colour, some of the yellowish ground colour only appearing at the bases of the sepals and petals, and between the spotting of the lip.

Odontoglossum crispum "Confetti," from J. LEEMANN, Esq., Heaton Mersey (gr., Mr. Edge).—A splendidly-formed flower, white tinged with purple, and closely spotted with purple blotches of various sizes and forms.

AWARD OF MERIT.

Laelia × *Mrs. Gratrix*, *Tring Park variety*, from the Hon. WALTER ROTHSCHILD, M.P.—The plant bore a three-flowered inflorescence of blooms larger than the original, and of a bright reddish-orange colour. Lip well displayed and fringed.

Odontoglossum crispum "Domino," from J. LEEMANN, Esq., Heaton Mersey (gr., Mr. A. Edge).—Flowers of good size, white with dark purplish blotches.

Odontoglossum crispum "Commiss of Derby," from J. LEEMANN, Esq. (gr., Mr. A. Edge).—A very pretty and distinct variety with white flowers tinged with rose, and evenly spotted with dark purplish markings.

Odontoglossum crispum "Raymond Crawshaw," from Dr. B. CRAWSHAW, Esq. (gr., Mr. Stables).—A grand flower of the best type, all the segments being broad, and of fine substance. Flower white tinged with rose-purple at the back, and which shows through the surface. Sepals and petals bearing a profusion of blotches of a peculiar orange-brown tint. A remarkably distinct and good form.

Sobralia Ruckertii, from Sir TREVOR LAWRENCE, Bart., Burford (gr., Mr. W. H. White). A rare, handsome, and little-known species, with smaller flowers than those of *S. macrantha*, but better in floral arrangement. Sepals and petals pale rose-purple; lip white at the base, and with a showy dark yellow plate running up the centre; front of the lip bright dark rose-purple.

Brassia-Cattleya nivalis, from J. LEEMANN, Esq., Heaton Mersey (gr., Mr. A. Edge). The result of crossing *Brassavola fragrans* and *Cattleya intermedia*. Habit of plant and flowers similar to those of the natural hybrid *Brassia-Cattleya* × *Lindleyana*. Flowers white, with a scarcely perceptible rose-tint at the back of the sepals.

Cattleya Mendeli *Queen Alexandra*, from Mr. H. A. TRACEY Twickenham. A very beautiful and large form, with the front and the margins of the side-lobes of the lip freckled with rose-purple, a rose-coloured feather being also on the tips of the petals.

Botanical Certificate to *Oncidium stramineum*, a pretty yellowish-white species, spotted with purplish spots, from Frau IDA BRANDT, Brunnenhof, Zurich (gr., Mr. Schlecht).

Cultural Commendation to Mr. R. B. LEECH, Dulwich, for a fine *Epidendrum Wallisii*, and two *Oncidiums*.

Narcissus Committee.

Present: Mr. J. T. Bennett-Poë, chairman; Miss Willmott, Messrs. J. Pope, J. D. Pearson, R. Sydenham, C. Wolley-Dod, A. Kingsmill, W. Titheradge, W. Goldring, J. H. de Graaff, W. Wars, Revs. G. E. Bourne and G. H. Engleheart.

This was the fullest gathering of the season, and many interesting flowers were submitted to the Committee, although the fierce sun of the week following the previous meeting on April 23 had abolished all but the late kinds.

A Vote of Thanks was passed to Messrs. MEERBEEK & Co. for a large collection of Dutch-grown *Tazettas*.

This being the last meeting of the Narcissus Committee for 1901, a unanimous Vote of Thanks was passed to the chairman, J. T. Bennett-Poë, Esq., and the secretary, C. R. Scrase-Dickins, Esq., for their assiduous services.

AWARDS OF MERIT.

An old form of the *Medio-coronati*, D. E. Wemyss, gained an Award of Merit from excellent flowers brought by Miss WILLMOTT.

Narcissus Aftermath.—A new variety, having a fiery orange edge to the corona, and a perianth of a creamy-white; total width of the blooms 3 inches. Shown by the Rev. G. H. ENGLEHEART, Appleshaw, Andover.

Narcissus Spenser.—Also new; corona edged with reddish-orange, perianth of pure white; a very beautiful variety. Shown by the Rev. G. H. ENGLEHEART.

Narcissus Day Star.—A late variety, having a bright lemon-yellow, saucer-like corona, and a perianth of creamy-white. Shown by the Rev. G. H. ENGLEHEART.

Narcissus Seabird.—A variety with a slightly elongated corona of a yellow colour, and a perianth possessing wrinkled segments, whose edges are turned inwards, and of pure white. Shown by the Rev. G. H. ENGLEHEART.

Narcissus Rear-Guard.—Pure bright yellow corona, and creamy-white perianth, having imbricated segments; a solidly built Nelsoni. Shown by the Rev. G. H. ENGLEHEART.

Narcissus Amber.—A Nelsoni, with white perianth and long cylindrical crown, yellow, flushed orange; and *N. Corydon*, a triandrus hybrid, with creamy cup and reflexed white segments. Both from Miss WILLMOTT.

Miss SPURRELL sent a high-coloured incomparabilis, white, with red-edged corona, named *Major Spurrell*.

FIRST-CLASS CERTIFICATES.

Two exquisite novelties of the Leedsii section, both ivory-white selfs, with finely-formed perianths and short open cups, obtained the distinction of First class Certificates. Moonbeam from Mr. R. BACKHOUSE, and Elaine, a flower of Mr. Engleheart's raising, from Miss WILLMOTT.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq. (Chairman); and Messrs. H. Esling, Jos. Cheal, W. Bates, S. Mortimer, A. Dean, H. S. Rivers, G. Kelf, W. Pope, E. Beckett, J. Jaques, Jas. H. Veitch, M. Gleeson, A. Ward, G. Norman, G. Wythes, H. Balderson, J. Smith, A. H. Pearson, G. Reynolds, and Rev. W. Wilks.

MESSRS. J. VEITCH AND SONS, Ltd., Royal Exotic Nurseries, Chelsea, showed about fifty dishes of Apples and two of Pears, most of the fruit being in a capital state of preservation, notwithstanding the lateness of the date. The Pears

were Mariotte de Millepied and Bergamotte Liabaud. The Apples that showed the least signs of having been stored for seven months were Northern Greening, Beauty of Beaufort, Bess Pool, Baumann's Red Reinette, Brownlee's Russet, Norfolk Beaufin, Alfriston, Farleigh Pippin, Beauty of Kent, Lady Lennox, Gooseberry, Peck's Pleasant, Bramley's Seedling, Melon Apple, Rhode Island Greening, Bismarck, Barnack Beauty, Lane's Prince Albert, Mère de Ménage, Newtown Pippin, Dumelow's Seedling, Lamb Abbey Pearmain, and Newton Wonder. The collection received an award of a Silver-gilt Knightian Medal.

PERCIVAL BOSANQUET, Esq., Pond Field, Hereford, showed a dish of the Navel Lemon, a Pear-shaped fruit, 4 inches long and 2½ inches wide (Vote of Thanks).

J. T. BENNETT-POË, Esq., Holmewood, Dorking, showed a dish of Lemons, receiving a Cultural Commendation.

A. HARGREAVES BROWN, Esq., Broome Hall, Surrey (gr., Mr. B. Greaves), showed a box of Strawberries (forty-five fruits) of Royal Sovereign, receiving a Cultural Commendation.

MESSRS. H. CANNELL & SONS, The Home of Flowers, Swanley, Kent, showed Pea King Edward VII., as plants growing in narrow boxes. The plants were of an average height of 3 feet, and well podded, each pod holding on an average nine seeds (Cultural Commendation).

There were several exhibits of Radishes, but no awards were made. Some fine Rhubarb was shown, and various seedling Apples.

ANNUAL DINNER OF THE ROYAL GARDENERS' ORPHAN FUND.

SUM SUBSCRIBED £620.

The annual dinner of this deservedly popular institution was held at the Hotel Cecil on Tuesday evening last, the Hon. W. F. D. Smith, M.P., presiding. The Chairman was supported on his right by Mr. N. N. Sherwood (Treasurer), and upon his left by the Rev. W. Wilks, M.A. Amongst the general company, which numbered considerably over 100 persons, were noticed the following gentlemen: Arnold Moss, J. Gould Veitch, Baker (Thames Bank Iron Co.), H. G. Morris (Protheroe & Morris), W. Atkinson, Segar, J. F. Douglas, R. P. Glendinning, T. W. Sanders, G. Reynolds, J. Sweet, G. Cuthbert, J. McKercher, &c. The toast list was not long, and there were first-class musical arrangements under the direction of Mr. Herbert Schartau. When the Royal toasts had been honoured, the Chairman proposed the toast of the evening, "The Royal Gardeners' Orphan Fund." He declared that anyone who possessed a garden should feel an interest in that Fund. Like many others, the Chairman said, he was fortunate in possessing a garden, but he had not a scientific knowledge of gardening. Therefore they had to depend upon those whose children this Fund existed to support. After appreciative reference had been made to the spread and popularisation of gardening, in private residences, nursery and seed businesses, and in market establishments, Mr. Smith proceeded to say that even those who have not a garden, but who purchase their fruits, vegetables, and flowers, from the huge markets, or from the tradesmen, ought to consider whether or not they have discharged their whole duty, when they have paid for such products. Much of the choicer fruit and many flowers were cultivated in these market establishments in glasshouses, that are not conducive to the health of those who have to work in them. Ingress and egress from such houses into the colder air out-of-doors had probably caused the deaths of the fathers of some of the orphans now upon the Fund. The Fund did its work at the best time; it paid 5s. per week to children who were left unprovided for, and when they reached the age of fourteen years, it frequently provided the fee required for apprenticeship, and purchased the necessary clothing and boots. Any money that is given will go directly to the relief of the children, for a capital sum has already been invested, which produces sufficient income to pay the very moderate expenses of management. The Fund had dealt, or was dealing with 143 orphans, and at the present time there were eighty-six children under the care of responsible guardians approved by the Committee. Further annual subscriptions were needed, that the Committee might be able to deal with certainty with all the cases that will come before them. He pleaded for the Fund, because the gardener was a man who followed an occupation he himself loved, and one which he believed it to be his interest to foster and further to the best possible degree.

Mr. N. N. Sherwood (Treasurer) replied. He said the receipts for last year were £100 more than they had been previously, but the expenses were also greater. At the present time, those eighty-six children mentioned by the Chairman were being maintained at a cost of a trifle over £1000 a year. Mr. Sherwood read several letters descriptive of some of the necessitous cases the Fund had assisted. He

urged gardeners to make the Fund better known to their employers and others, and declared it was an institution that deserved their hearty support.

The toast of "Gardeners and Gardening" was proposed by Mr. F. Varley, and in responding to this, Mr. T. W. Saunders suggested that gardeners might take example from the Salvation Army, and observe a self-denial day or week, and abstain from tobacco and unnecessary beverages during that time, for the sake of the orphans.

Other toasts included "The Chairman," "The Press," "The Visitors," and "The Secretary" (Mr. Brian Wynne).

The Chairman was unable to stay until the meeting terminated owing to duties at the House of Commons, and Mr. N. N. Sherwood succeeded to his position.

The total amount of subscriptions realised was about £620. Upon the Chairman's list of £375, were the following donations:—The Hon. W. F. D. Smith, M.P., 50 guineas; Messrs. Rothschild, 25 guineas; N. N. Sherwood, £25; W. Sherwood, £5; Ed. Sherwood, £5; Mrs. Campbell, £5; Arthur Sutton, 25 guineas; Leonard Sutton, 25 guineas; Jas. Veitch & Sons, 10 guineas; H. J. Veitch, 5 guineas; Sir C. Tennant, £10; Mrs. W. G. Head, £9; Geo. Burt, £5; G. H. Richards, 5 guineas; Messrs. Dicksons, Ltd., Chester, £5; H. B. May, £5; Messrs. Wills & Segar, 5 guineas; The *Gardeners' Chronicle*, Ltd., 5 guineas; C. B. Kinnel & Co., 5 guineas; A. H. Smee, 5 guineas; Thames Bank Iron Co., 7 guineas; A. Waterer, 5 guineas; Messrs. Fisher, Son & Sibray, 5 guineas; and others smaller amounts, making a total of £375. The friends connected with Covent Garden Market together subscribed £104 5s. The Stewards' lists comprised G. H. Cuthbert, £16 14s.; W. Whitpain Nutting, £9 8s.; H. Perkins, £4 10s. 6d.; P. Knowles, £10 14s. 4d.; G. Reynolds, £25, including £20 from Mr. Leopold de Rothschild; W. Howe, 5 guineas; J. F. McLeod, £12 2s. 6d.; W. H. Cuthbush, £10 7s.; Harold G. Morris, £21 11s.; T. W. Sanders, £5 9s. 6d.; and R. Dean, £7 17s.

The tables were prettily decorated with plants and flowers, kindly given by a few friends.

SOCIÉTÉ NATIONALE D'HORTICULTURE DE FRANCE.

APRIL 25.—At the Orchid show arranged by this Society, held on the above date, only six exhibits were staged, but all were of interest.

The group shown by M. PEETERS, nurseryman, of Brussels, received a Gold Medal. The plants were not numerous, but the specimens were noteworthy. They included: *Cattleya intermedia alba*, pure white; three plants of *Phaius* × *Normani*; *Zygopetalum* × *Perenonidi*; *Odontoglossum crispum*, excellent in form and colouring; a good *Cattleya Mendeli*; *Enlophiella Elisabethae*, with five floral spikes on two pseudobulbs; *Cattleya* × *Parthenia rosea*; *Cypripedium* × *microchilum*, and other plants.

M. DRIEGER and M. MARON each obtained a large Silver-gilt Medal. The former exhibitor showed a large and varied assortment of well grown plants, among them *Lycaste Skinneri*, bearing numerous flowers; *Odontoglossum Halli*, with a very long stem; *Bifrenaria Harrisoniae*; *Dendrobium atro-violeaceum*, and *Comporettia macrolepteron*.

M. MARON sent a group of fine hybrids, including several specimens of *Cattleya* × *Cecilia* (Louis Chaston), covered with bloom; *Lælio-Cattleya* × *highburiensis* Brunoy var., of a remarkable ruby colour.

M. MAGNE, an amateur, of Boulogne-sur-Seine, sent a collection in which the best plants were a fine *Odontoglossum triumphans*, with large and broad flowers; and a good *Cymbidium Lowianum*, with numerous floral racemes; and also various hybrid *Cypripediums*.

Among the Orchids sent by MM. DUVAL ET FILS, of Versailles, were *Dendrobium Dalhousieanum*, a fine *Cypripedium Lawrenceanum*, C. × *selligerum majus*, *Lælio-Cattleya* × *Onyx*, and other hybrids.

M. BÉRANER, of Paris, showed some interesting plants, among them *Trichopilia suavis alba*, *Scuticaria Hadweni*, *Cymbidium Lowianum concolor*, and *Miltonia* × *Bleuana*.

The jury were MM. GEORGES MANTIN, President; G. T. GRIGNAN, Secretary; CARDOSO, RIMFERT, and GAUTIER.

The Société Nationale d'Horticulture de France propose to organise a "fête de bienfaisance," to be held on June 1, on the occasion of the great spring show. The fête will be held in the Society's Rooms, 84, Rue de Grenelle, Paris. There will be a concert and a ball.

NORWICH DAFFODIL SHOW.

APRIL 25.—A lovely mild and sunny spring morning ushered in an ideal day for Norwich and Norfolk spring-flower Daffodil Show, which was held in the old Historic Hall of St. Andrew, Norwich. As an exhibition it was a complete success, but there was a poor attendance.

The cut flowers were arranged on two long tables extending the whole length of the hall, while the Orchids were staged in front of the orchestra and at the sides of the hall; standing on the floor were the few specimen Azaleas, not the stiff pyramids we have got so tired of, but naturally grown plants. Among the miscellaneous subjects two old friends were in evidence, *Strelitzia regina*, with two bloom spikes; and a

specimen of the heath-like *Fabiana imbricata*. *Coleus* and *Caladiums* were well coloured for so early a date; but with the exception of the zonal *Pelargoniums*, little can be said in commendation of the other plants staged.

The leading feature, of course, was the Daffodils, which were particularly well shown by several amateurs and the trade, the well tried old favourites being set up in marked contrast to many up-to-date novelties.

There was a remarkably good exhibit of culinary and dessert Apples, and stewing Pears, for the season, even Blenheim Orange Pippin was in very fine condition, and there was a handsome dish of Anne Elizabeth; while the true Norfolk Beaufin and Striped Beaufin had two representative exhibits, which were excellent fruit.

Herbaceous perennials were good, the 1st prize being awarded to Capt. B. J. PETRE (gr., Mr. G. Davidson).

MISCELLANEOUS.

"HOBBIES," Dereham (John Green), put up a very artistically arranged stand, the centre being *Acer Negundo foliis variegatis*, and tall pyramids of Rose Crimson Rambler, well flowered, the base being filled with bedding zonal *Pelargoniums*. Mr. F. CANT had some very fine cut Roses for the season. Mr. G. W. MILLER, Wisbech, and Messrs. DANIELS BROS., Norwich, staged grand lots of Narcissi. Mr. Miller took equal 1st prize in the large open class, the 1st being awarded to Capt. PETRE, who staged his flowers most artistically, but by points was adjudged only equal to Mr. Miller.

CHESTER PAXTON.

In connection with the Chester Society of Natural Science, Literature, and Art, the annual exhibition of spring flowers was held in the Grosvenor Museum recently.

As on previous occasions, the largest exhibit was sent from the gardens of the Duke of WESTMINSTER, per Mr. N. F. Barnes. The principal features of this exhibit were a collection of Daffodils, chief among which were Emperor, Empress, Duchess of Westminster, Minnie Hume, Princess, and Stella. Intermixed with these were beautiful specimens of *Schizanthus*, which are always so prominent a feature in the long corridor of Eaton about this time of the year. Other notable flowers in his Grace's collection were the new star *Cineraria*, double pink flowering *Cherry*, *Azalea mollis*, Tulips in great variety, Lilacs, Tea Roses, and Carmichael's hybrid *Azaleas* in fine form.

Next in order of merit was an exhibit sent from Dr. MULES, Gresford, who is famous for the cultivation of all kinds of hardy border flowers. The principal features of this exhibit was a magnificent group of *Narcissus Madame De Graaff*, each bloom showing boldness and perfection which left nothing to be desired. Good examples of *N. Mary Anderson*, Queen of Spain, albicans, and *Horsfieldi*, were also shown, as well as American *Fritillarias*, single and double-flowered hybrid *Primroses*, *Anemones*, &c. His Honour Judge WYNN FROULKES (gr., Mr. H. Rowe), staged a beautiful collection of Daffodils and Star *Cinerarias*. Miss HUMBERTSON, of Newton Hall (gr., Mr. Wakefield), was also well represented by a large and varied collection of Daffodils, Jonquils, *Anemones*, *Hyacinths*, Tulips, and *Doronicums*; Mr. Thomas Weaver, gr. to Mrs. TOWNSEND INCE, Christleton Hall, sent a lovely collection of Tulips, Daffodils, Grape *Hyacinths*, *Mignonette*, &c.; Mrs. FITZPATRICK CAMPBELL, Vicar's Cross (gr., Mr. Ryder), and Mr. EDWARD DIXON, Littleton Hall (gr., Mr. J. Dutton), sent select exhibits of Tulips, Jonquils, Violets, and *Fritillarias*; Mr. J. TAYLOR, gr., Hoole Hall, sent some choice varieties of *Narcissi* and *Auriculas*; Messrs. DICKSON, Ltd., exhibited choice specimens of *Narcissi*, including their well-known Sir Watkin and the Duchess of Westminster, Stella, Maximus, and John Bain; Messrs. McHARTIE & Co. staged a small but select collection of Daffodils, chief among which were Irish King and Henry Irving. The show proved to be the largest that has been held in Chester.

READING & DISTRICT GARDENERS' MUTUAL IMPROVEMENT.

At the last meeting of the session a good attendance of members assembled to hear a lecture on "Early Potato Culture," given by Mr. W. P. Lasham. The subject was treated in an interesting manner under the following headings:—the selection of suitable varieties for the purpose in view, size of sets, the setting-up of tubers in boxes, greening a non-greening, forcing in boxes, growing in pots, forcing in hot-beds, planting in borders against walls facing south, soil, &c. Reference was also made to the methods adopted by market cultivators in the Canary Islands, Cornwall, Jersey, and Scotland, in the production of Potatoes. The lecture was illustrated by a number of limelight pictures, and a discussion followed the reading of the paper.

A fine display of flowers was made on this occasion by Mr. G. Stanton, gr., Park Place, including *Schizanthus*, *Magnolia conspicua*, M. *conspicua* *Soulangeana*, *Celsia* species, and *Azara microphylla*; by Mr. Exler, gr., Redlands, who showed two plants of *Phaius*; Mr. E. S. Pigg, gr., Samoa, *Cybidium Lowianum*; Mr. F. Lever, gr., Hillside, *Cineraria stellata*, in pots of various sizes, and a William Allen Richardson Rose, bearing fifty six blooms, grown from a cutting inserted in August, 1899. *Narcissus* were shown in large numbers, Mr. W. Townsend, gr., Sandhurst Lodge, exhibiting forty-four varieties; Mr. A. G. Nichols, gr., Stratfield-saye, twenty-two varieties; and Messrs. Sutton & Sons, ten varieties. A vote of thanks was accorded to Mr. Lasham, and to the exhibitors.

MARKETS.

COVENT GARDEN, MAY 9.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantums, p. doz.	5 0-7 0	Ferns, small, per	100
Arbor-vitæ, var., doz.	6 0-36 0	100	4 0-6 0
Aspidistras, p. doz.	18 0-36 0	Ficus elastica, each	1 6-7 6
— specimen, each	5 0-10 6	Foliage plants, var.,	
Cannas, per dozen	18 0 —	each	1 0-5 0
Crotons, per doz.	18 0-30 0	Lily of Valley, each	1 9-3 0
Cyclamen, per doz.	8 0-10 0	Lycopodiums, per	
Dracenas, var., per		dozen	3 0-4 0
dozen	12 0-30 0	Marguerites, per	
— viridis, per doz.	9 0-18 0	dozen	8 0-12 0
Ericas, var., per doz.	12 0-36 0	Myrtles, per dozen	6 0-9 0
Eucyniums, various,		Palms, various, ea.	1 0-15 0
per dozen	6 0-18 0	— specimens, each	21 0-68 0
Evergreens, var.,		Pelargoniums, scar-	
per dozen	4 0-18 0	let, per dozen	0-12 0
Ferns, in variety,		— Ivyleaf, per doz.	8 0-10 0
per dozen	4 0-18 0	Spiræas, per dozen	6 0-12 0

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Asparagus "Fern,"		Lily of Valley, per	
bunch	1 0-2 0	doz. bunches	6 0-12 0
Carnations, per doz.		Maidenhair Fern,	
bunches	1 6-2 6	per doz. bunches	4 0-8 0
Cattleyas, per dozen	9 0-12 0	Mignonette, per doz.	
Eucharis, per dozen	2 0-3 0	bunches	4 0-6 0
Gardenias, per doz.	1 6-2 6	Odontoglossums, per	
Lilium Harrisii, per		dozen	2 6-6 0
dozen blooms	2 0-4 0	Roses, Tea, white,	
Lilium lancifolium		per dozen	1 0-3 0
album, per dozen		— Catherine Mer-	
blooms	1 6-3 0	met, per dozen	3 0-6 0
Lilium rubrum, doz.	3 0-5 0	Smilax, per bunch	3 0-5 0
Lilium longiflorum,		Tuberose, per doz.	
per dozen	2 0-4 0	blooms	0 4-0 6

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, English,		Grapes, New Ham-	
per bushel—		burgh, per lb.	2 6-4 0
cookers, large	4 0-7 0	— Belgian, black,	
— Wellington	8 0-10 0	per lb.	1 3-2 0
— Australian		— Almeria, doz. lb.	10 0-12 0
(South), Vic-		Lemons, case	9 0 —
torian, and Tas-		Lyches, new, per	
manian, case	10 0-14 0	packet	0 10 —
Bananas, bunch	7 0-10 0	Melons, each	2 0-4 0
— loose, per doz.	1 0-1 6	Nectarines, per doz.	36 0 —
Cherries, per box	2 0 —	Oranges, Navel	12 0-16 0
Cobnuts, lb.	0 5-0 6	— Murcia, case	8 6-25 0
Cranberries, case	10 0 —	— Denia	17 0-40 0
Figs, per dozen	4 0-10 0	Peaches, dozen	10 0-35 0
Gooseberries, quart	2 0 —	Pines, each	2 6-4 6
Grapes, Muscats,		Sapucaia nuts, lb.	1 0 —
home - grown,		Strawberries, A., lb.	3 0-4 0
per lb.	4 0-6 0	— B., per lb.	1 6-2 6

VEGETABLES.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe,		Mint, natural	2 0-4 0
per doz.	2 0-2 6	Mushrooms, house,	
— Jerusalem, sieve	0 9-1 0	per lb.	0 9-0 10
Asparagus Sprue	0 6 —	Onions, picklers,	
— home - grown,		per sieve	2 0-3 0
per bundle	1 0-5 0	— cases	8 0-9 0
— Giant, bundle	5 0 —	— Egyptian, bags	4 0-4 6
— various, from...	0 3 —	— new, bunches,	
Beans, dwf. Madeira,		per doz.	1 0-1 6
per bkt.	2 6 —	Parsley, 12 bunches	1 0-1 6
— Ch. Islds. and		— per sieve	0 6-1 0
home, dwf.,		Parsnips, per cwt.	
new, per lb.	1 0 —	bag	1 0-1 3
— French, dwf.,		Peas, frame, per lb.	0 6-0 10
packets	0 9 —	— Flats	4 0-6 0
— broad, in flats	3 6 —	Potatoes, per ton	90 0-135 0
Beetroot, bushel	1 0-1 6	— New, per cwt.	12 0-14 0
Beet, per dozen	0 6 —	— New French,	
Cabbage, tally	2 0-4 0	per cwt.	16 0 —
— dozen	0 6-1 0	— Malta, per cwt.	10 0 —
Carrots, 12 bunches	1 6-2 0	— New France,	
— washed, in cwt.		Channel Islds.,	
bags	2 0-2 6	per lb.	0 4 —
— new, bunch	0 6 —	Radishes, per 12	
Cauliflowers, p. doz.	1 0-1 6	bunches	0 6-0 9
— crate	4 0-6 0	Rhubarb, per dozen	
— tally	4 0-7 0	bunches	0 6-0 9
Cress, per dozen		— Out-of-doors	1 0-2 0
punnets	1 6 —	Salad, small, pun-	
Cucumbers, doz.	2 9-4 0	nets, per dozen	1 3 —
Endive, new French,		Seakale, natural,	
per dozen	1 3 —	dozen punnets	6 0 —
Garlic, lb.	0 2 —	Shallots, per lb.	0 2 —
Horseradish, Eng-		Spinach, English,	
lish, bundle	1 0-1 6	bushel	1 0-1 6
— foreign, per		Salsify, bunch	0 3 —
bunch	0 9-1 0	Tomatoes, Canary	
— loose, per dozen	1 0-1 6	deeps	4 0-4 6
Leeks, per dozen		— English, new,	
bunches	1 0 —	per lb.	1 0-1 3
Lettuces, Cabbage,		Turnips, per dozen	1 6-2 0
per dozen	0 8-1 3	— in bags	1 6-2 0
— Cos, per doz.	2 6-4 0	— new, bunch	0 0 —
Mint, per dozen		Watercress, p. doz.	
bunches, forced	4 0 —	bunches	0 4-0 6

REMARKS.—Gooseberries and Cherries are now coming in. Mangos are arriving in cases of 24, and fetch from 8s. to 10s., shipped at Bombay. Home-grown Cabbages, Lettuces, and Radishes have commenced to arrive. Cucumbers have advanced in price; and the supply of Cabbages, Broccoli, &c., is abundant.

POTATOES.—Various sorts, 90s. to 110s. per ton; foreign bags, 50 kilo., 4s. to 5s.; Dunbar Main Crop, per ton, 125s. to 135s.; Up-to-Date, 125s. to 135s. John Bath, 32 & 34, Wellington Street, Covent Garden.

SEEDS.

LONDON: May 8.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., state that owing to the welcome rains numerous retail sowing orders for grass, Clover, and other farm seeds are still coming to hand, which are executed at the lower and moderate rates now accepted. Prices of Sanfoin, Timothy, and Lucerne seeds are unaltered. The market for Mustard and Rape seed is steady. Turnips move off slowly. There is a good inquiry for Mangold-seed. Bird's-seed all round show no fresh feature. Blue Peas sell better, at enhanced currencies. The Board of Trade returns give the imports of Clover and grass-seeds into the United Kingdom for the four months of this year ending April 30 as 152,455 cwt., value £233,849; as against 142,110 cwt., value £265,631 for the same period of 1900.

FRUIT AND VEGETABLES.

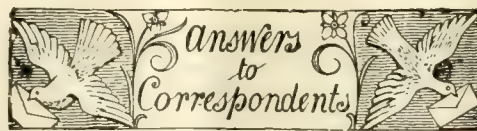
GLASGOW: May 8.—The following are the averages of the prices recorded since our last report:—Grapes, English, new, 4s. 6d. to 5s. per lb.; Mushrooms, 1s. to 1s. 3d. do.; Potatoes, Maltese, 8s. to 10s. per cwt.; kidneys, 15s. do.; Onions, Egyptian, 5s. to 5s. 3d. per cwt.; Valencia, 4 in a row, 9s. per case; 5 in a row, 9s. do.; Tomatoes, Canary, deeps, finest medium, 4s. 6d. to 5s. 6d. per box; others, 2s. 6d. to 3s. 6d. do.; cases, 6s. to 8s. 6d.; Apples, Canadian: Baldwins, Spies, Greenings, Russets, &c., 16s. to 28s. per barrel; Americans: various varieties, 15s. to 25s. do.; Maine and Boston Baldwins, 16s. to 25s. do.; Tasmanian, Ribstons, 10s. to 11s. per case; Alexanders, Cox's Orange Pippin, 12s. to 13s. do.; Crow's Eggs, Scarlet Pearmain, &c., 8s. to 11s. do.; Californian, Newton Pippins, four in a row, 12s. 6d. do.; Oranges, Valencia, ordinary, 42s. 8s. 13s. 6d. to 20s. per box; large do., 16s. to 24s.; extra large, 20s. to 26s.; large and extra large, 714s. 21s. to 23s.; Lemons, Palermo, 300 s. 7s. 6d. to 8s. 6d. per box; 360s. 7s. to 8s. do.; boxes, 7s. to 7s. 6d.; Bananas, Canary, extras, 10s. 6d. to 11s. 6d. per bunch; No. 1, 8s. 6d. to 9s. 6d.; No. 2, 6s. 6d. to 7s. 6d.; Jamaica, large bunches, 7s. to 8s. 6d.; small do., 4s. 6d. to 6s.

CORN.

AVERAGE PRICES OF BRITISH CORN (per Imperial qr.), for the week ending May 4, and for the corresponding period of 1900, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1900.		1901		Difference.
	s.	d.	s.	d.	
Wheat	25	11	26	9	+ 0 10
Barley	25	3	24	4	+ 1 1
Oats	18	0	19	1	+ 1 1

PUBLICATIONS RECEIVED.—*Annual Report of the Royal Botanic Gardens, Trinidad.* We note that the Departmental Herbarium was moved in July and August to its new quarters (which are more convenient), and that the number of specimens has increased during the year, but not largely. Further records deal with Seedling Sugar canes and Rubber experiments.—From the Central Experimental Farm, Ottawa, Ontario, Canada, *Catalogue of the Trees and Shrubs in the Arboretum and Botanic Garden* (1899); and also *Catalogue of Fruit Trees under Test at the Experimental Farm at Agassiz, British Columbia*, by Wm. Saunders and Thos. A. Sharpe, forming Bulletin No. 3, second series, June, 1900.—*The Queensland Flora*, by F. Manson Bailey; Part III. Caprifoliaceæ to Gentianeæ.—*Queensland Agricultural Journal*, March. With articles on: Queen Victoria as an Agriculturist, Potato-scab, Benefits of Potato-spraying, Lucerne, Orchard Notes, an Experiment in Vine-topping, Water-Hyacinth Destroyer, Mustard and Cress, Growing Beans in dry Weather, Cottage Vegetable Garden as a Pleasure and Profit, Perfume Farm in Western Australia, and various notes on Coffee and Rubber.—*Proceedings of the Academy of Natural Sciences of Philadelphia*, 1900. Part III, Sept.—Dec.—*Journal of the Department of Agriculture of Western Australia*, March, 1901. This includes notes on stock and on dairy work, and on the orchard and vineyard. We notice an article, with illustration, on *Eragrostis Brownii* var. *patens*, a summer forage grass.—From the U. S. Department of Agriculture come both the following: Division on Entomology, *Bibliography of the more important Contributions to American Economic Entomology*, Part VII. The most important writings published between Dec. 31, 1896, and Jan. 1, 1900.—Report No. 68 *Catalase*: A new enzyme of general occurrence, with special reference to the Tobacco-plant, by Oscar Loew.



ANEMONE BLANDA: E. T. You may recognise this in the leaf by the circumstance that the leaves are softly downy, whilst in *memorosa* they are glabrous. The lobes of the leaf in *blanda* are shorter, more lobed, and the divisions more rounded and less acute than in *memorosa*.

BOOKS: TABLE DECORATIONS. *Decorator*. There is no modern manual dealing with this subject. That by Annie Hassard, once considered valuable, may be picked up at the old bookshops; but we imagine that much of its teaching would now be considered old-fashioned.

BROWN PATCHES ON TURF: R. N. H. The description of the appearance of the patches point to one of the Fairy-ring funguses being the cause. Are you sure that no such fungus has grown on them this year or last? See Answers to Correspondents' column in our issue for April 27 last, p. 276, under "Fairy Rings."

CYPHOMANDRA BETACEA AND SOLANUM GUATEMALENSE: W. (see p. 269). We are assured that the representation of the Cyphomandra in the *Gardeners' Assistant* was a reduced copy of the figure in the *Botanical Magazine*, t. 7682. Our surmise was therefore incorrect. We have since had the opportunity of seeing fruits of the "Melon-Pear," which are so like those of the Cyphomandra, as figured, that we are not surprised at the error into which we fell. The colour is, of course, different, but that is not shown in a woodcut. Our apologies are tendered to the Editor of the *Gardeners' Assistant*.

FICUS INDICA: G. T. Take two-year-old wood and make into cuttings of from 4 to 6 inches long, and insert these singly in large 60's filled with sandy loam. Place the cuttings in a case, or under a hand-light on bottom-heat of 80° to 85°, and keep moist, and during sunshine shade them. The leaves should be supported by little sticks and matting. If only a few plants are wanted, let notches or rings be cut on the branches, and cover the wounds with a ball of sphagnum or wood-moss and sand, or cocoa-nut-fibre refuse, binding it compactly with worsted or raffia, and keep moist and warm. Roots will form in a month in sufficient number to support the plant. It should then be severed from the parent plant, and potted without disturbing the material much.

FUNGUS ON ERYTHRONIUM: C. W. D. The fungus on the Dog's-tooth Violet is *Botrytis cinerea*, the same as the one causing the Snowdrop disease. The soil round diseased plants should be removed, otherwise the spores and sclerotia present will probably infest adjoining plants. G. M.

GRAPE-FRUIT: W. T. The trade name of Citrus decumana, also called Shaddock, from Captain Shaddock, by whom it was first carried from China to the West Indies; Pomeloes, Pomelemousses, &c.

HORTICULTURAL EXAMINATION, 1901: A Subscriber. We do not know at what date the award list will be made public. But why not enquire at the Royal Horticultural Society's Offices, 117, Victoria Street, Westminster?

INSECT IN VINERY: Ansidus. You have sent a "click-beetle" or "Skipjack" (*Athous hæmorrhoidalis*). The larval stage of this insect is a "wire-worm." It is not, however, the commonest species. The habit of simulating death is common to the insects of this family of beetles, and the jumping powers are also characteristic of them. R. F.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—R. R. Berberis Darwini, native of Chile.—C. E. 1, *Leucoium vernum*; 2, *Asclepias curassavica*; 3, *Dentia gracilis*.—Youngster. 1, *Pittosporum tenuifolium*; 2, *Pittosporum* species; 3, not recognised; 4 and 5, *Elwardsia grandiflora*.—J. T. *Hacquetia Epipactis*, often called *Dondia*.—Cum-brian. *Granium rotundifolium*.—Horley. 1, *Ranunculus aquatilis*; 2, *Ribes aureum*; 3, *Oplismenus Burmanni variegatus*; 4, *Streptosolen Jamesoni*; 5, *Kerria japonica flore pleno*. For

other specimens see "Answers to Correspondents" later.—W. G. C. 1, *Selaginella Wildenowii*; 2, *Selaginella caesia arborea*; 3, *Lactrea tenericaulis*; 4, *Pteris serrulata cristata*; 5, *Oxalis*; 6, *Carex variegata*.—J. F. *Prunus Padus* (Bird Cherry).—G. C. W. *Prunus triloba*.—H. H., York. *Cinnam longifolium* and *Sprekelia formosissima*. We do not recognise the other specimen.—T. W. R. 1, *Pinus Laricio*, long leaved form; 2, *P. Laricio*; 3, *Janiperus virginiana Schottii*; 4, *Cupressus p'sifera* var. *filifera*.—H. F. P. *Mackaya bella*.

NAMES OF FRUITS: Newnham. The Apple more nearly resembles Black Foxwhelp than any known to us. This is described and illustrated by a sectional figure in "The Apple and Pear as Vintage Fruits."—J. M. Winter Greening, an excellent Apple for keeping in a fresh state over a considerable period; we have fruits two years old now, which are only just beginning to shrivel slightly, and they have lost but little weight.

PEACH LEAVES: *Anxious Enquirer*. Your Peaches are mildewed, against which you should employ flowers-of-sulphur, by means of a dredger or sulphurator, or make it into a paste and mix intimately with warm water, and apply with the syringe. Very badly mildewed shoots should be removed.

PICEA PUNGENS: E. A. The following are the most important dates relating to this beautiful species. We can furnish many more if requisite. If you adopt the new American plan, you must call it *Picea Parryana* of Sargent. If you prefer, as we do, the rules suggested at the Paris Conference, then the plant should be called *P. pungens*, Engelman, as it is in *Index Kewensis*, and in *List of Conifers*, &c., published in connection with the Conifer Congress; *Journal of the Royal Horticultural Society*, vol. xiv., p. 47, and many other books. *Picea pungens*, Engelman, in *Gard. Chron.*, March 15, 1879; *Picea Parryana*, Sargent's *Sylva*, vol. xii., 1893; *Abies Menziesii* var. *Parryana*, André, in *Gard. Chron.*, May 5, 1876. The tree was discovered by Dr. Parry in 1862.

PLANTS TO GROW OVER A FAMILY VAULT IN A COUNTRY CHURCHYARD AND REQUIRE NO ATTENTION FOR YEARS: *Eighty one*. *Hypericum calycinum* (St. John's Wort), the larger and the small *Periwinkles*, *Gentiana acaulis*, *Hepatica triloba*, and *Box*. All of these would grow in ordinary soil. If peat could be provided, *Gaultheria Shallon* and *G. procumbens*, *Erica herbacea*, and *E. h. alba*, *E. Tetralix alba*, *E. vagans alba*, and *Vaccinium Vitis Idæa* might be planted. If planted somewhat closely, any of these plants would cover the ground in a few years, and would not get unduly tall in ten years. Weeds would grow in any case, and some hand weeding would be indispensable. The seedling trees, &c., now in possession of the land should be chopped off with a mattock, a few inches below the ground level, when the roots would die.

TRITELEIA UNIFLORA: W. P. When the foliage has died down, lift the bulbs, dry them in the shade for a week or two, and replant in fresh soil. The bulbs are not improved by being kept long out of the soil.

VINES: C. H. The brown patches have the appearance of having been produced by a slime fungus. The leaves are exceedingly thin, through some detail in the cultivation afforded the Vines being incorrect. Afford the Vines a little ventilation early in the morning, before the sun has become hot, and follow the directions for the management of the vineries given occasionally in the calendarial article "Fruits under Glass."

COMMUNICATIONS RECEIVED.—Ed. André, Paris.—J. D.—W. W.—C. S. F.—J. Laing & Sons—W. Horne & Sons—A. C. F.—W. H. A.—H. M.—R. D.—G. H.—W. K.—S. W. F.—R. M.—E. C.—A. Worsey—W. M.—A. W.—D. R.—F. T. M.—E. B.—Wild Rosa—J. O'B.—W. B.—A. F. P.—J. C.—U. D., Berlin.—W. F. G.—Grape Grower—Reseder—W. Wells—C. W.

Advertisers are reminded that the "Chronicle" circulates among GOUNTRY GENTLEMEN, and ALL CLASSES of GARDENERS and GARDEN-LOVERS at home, that it has a specially large FOREIGN and COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.

(For Weather, see p. xiii.)



CATTELEYA X MISS HARRIS VAR. E. ASHWORTH.



THE Gardeners' Chronicle

No. 751.—SATURDAY, MAY 18, 1901.

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PENJERRICK.

[SEE SUPPLEMENTARY AND OTHER ILLUSTRATIONS.]

AMONG the many fair gardens that enrich with their varied beauties our south-western coast-line, warmed by the slow flood of the Gulf Stream that gently glides along its deeply-indented shore, few can rival, for unconventional charm and for the luxuriance of growth displayed by its many and rare contents, the valley-ensconced sanctuary of Penjerrick, the property of Mr. R. Fox. Situated a few miles from the sea-port of Falmouth, and in a southward-sloping dip of the rising ground some 200 feet above sea-level, the gardens occupy a naturally-sheltered position, the benefit of which is well exemplified by the manner in which many of the exotics established in the grounds retain their foliage uninjured through the winter months. Thus, towards the close of April, on the occasion of my visit to this attractive spot, though the adjacent Elms that formed the background were yet bare of foliage, and held exposed to full view the many nests of the busy rookery that burdened their spreading tops, the arching, 25 ft. long canes of the splendid clumps of *Arundinaria nobilis* were clothed to the tips with tapering leaves

that fluttered restlessly in the faintest zephyr, while the feathery fronds of the noble Tree Ferns (*Dicksonia antarctica*) spread unblemished in a circle some 10 feet in diameter above the brown, hairy stems (see fig. 114, p. 310). The views afforded from the many winding paths that wander through the lovely grounds, offer now a glimpse through some tree-embowered vista, now the sight of some denizen of other climes flourishing as though in its native soil; but perhaps a picture as attractive as any to be found in the gardens is that which meets the eye as one stands below the upper pond, and looks backward to where, at the top of a grassy slope, the house rises on the higher ground, the view being framed by handsome and graceful trees growing on either side of the glade in all the simplicity of natural informality: there a tall Fir or symmetrical Cypress, here a towering Weeping Beech with drooping branchlets swaying listlessly in the breeze, while on the pond in the foreground the Water Lilies float amid the shifting reflections that are mirrored on the still surface. In April the lower pond is white with the Hawthorn-scented blossoms of *Aponogeton distachyon*, the Cape Pond-weed, and later in the year its verge is fringed with bending Fern fronds.

Close to the house, and standing hard by a tall *Cordyline australis*, is a fine specimen of Fan Palm (*Trachycarpus excelsus*), while some of the old *Cordylines* that are met with in the grounds have thrown up several heads, many of which have attained a height of nearly 20 feet (see supplementary illustrations). Many of the *Acacias* are represented, *A. dealbata* and the allied *A. affinis* producing their golden blossoms ere spring has well commenced, followed by *A. longifolia*, *A. melanoxylon*, and *A. verticillata*, the latter loaded with flowers, forming a cloud of pale sulphur towards the end of April. *Ruscus androgynus*, also known as *Semele androgyna*, generally treated as a greenhouse climber, grows well in the open, and has borne flower; its cladodes, which pass for leaves, are very handsome, being considerably over a foot in length, and furnished with from twelve to twenty pinnate sections of a highly-polished green. Many rare *Rhododendrons* are grown, as well as a good collection of *Magnolias*. *Benthamia fragifera* and *Embothrium coccineum* are flowering trees that few, if any, of the best Cornish gardens are without; but Penjerrick possesses a specimen of the latter that is of exceptional size, and presents a gorgeous spectacle when glowing with its vivid scarlet flower-clusters in the spring. *Podocarpus andina* is about 40 feet in height, and there are fine examples of *Dacrydium Frankii*, *Cephalotaxus Fortunei*, *Fitzroya patagonica*, and other Conifers; *Leptospermum scoparium*, 20 feet in height; Camphor-tree of the same dimensions, Tulip-tree and Eucalypti, *Andromedas*, *Camellias* and *Azaleas*. Of exotic Ferns, *Woodwardia radicans*, *Lomaria magellanica*, and *L. proceras* grow luxuriantly in the open air, and many species of Bamboos, besides *Arundinaria nobilis*, already mentioned, flourish. The house is covered with flowering climbers, *Solanum jasminoides*, bearing its countless white bloom clusters through many months of the year, supplemented by *Jasmine*, *Clematis montana*, and climbing *Roses*. The grounds are at one spot intersected by a public road, but this, running below the general surface level, and being masked by a rustic bridge, does not obtrude its presence, and in no way detracts from the seemingly uninterrupted sweep of the gardens. S. W. F.

THE REVELATIONS OF MAY.

IN a previous article (April 27), of which this contribution may be regarded as a short continuation, I wrote incidentally of the flowering trees, then only beginning to unfold their varied hues. Since that embryonic period, many of the finest and most effective of these have come into bloom. Very beautiful are the pale pink blossoms of the Almond, which however is not flowering so profusely as it did last year; the snowy-white flowers of the Early Rivers, Black Eagle, and May Duke Cherries; the Czar, the July Green Gage, Denniston's Superb Gage, and Early Rivers' Plums, which are so luxuriant as to constitute a series of floral pictures exceedingly artistic in effect. My solitary Damson-tree is also festooned with graceful and delicate flowers, but it is not so reliable, so far as regards the formation of its fruit, as the Cherry or kindred Plum.

The Apple-blossom with me is much earlier than usual, as it showed its exquisite colour in the bud on May 1. Among the earliest-flowering Apples in my garden are the Duchess of Oldenburg (which was a great favourite of the late Mr. Rivers, of Sawbridgeworth), Beauty of Waltham, and the Irish Peach. Beautifully harmonising contemporaries of these are the Early Crawford Pear, which has a wide circulation in Scotland; Pitmaston Duchess, and Doyené du Comice. Regarding the last-mentioned, of which the great pomologist to whom I have alluded once said to me in his famous nurseries, that it was, in his opinion, the finest Pear in existence. It has, in any case, many admirable attributes, which the late Dr. Hogg, in his *Fruit Manual*, has well characterised.

There are many other flowering trees and shrubs which are at present adorning greatly our gardens and woodlands. I have never seen *Forsythia suspensa* more grandly impressive than it is at present in the gardens at Logan House, the residence of the chief proprietor in this picturesque parish. Very soon we shall have the graceful flowers of the "Mock Orange," *Philadelphus coronarius*; also the delicately refined blossoms of *Deutzia gracilis* and *D. crenata*, to be followed by the more vivid and far-shining radiance of the golden *Laburnum*. Then, towards the end of May, we shall have the Lilacs and Hawthorns, with their fascinating fragrance. The latter, which, with the lovely Wild Cherry, is the chief beauty of early summer, I have poetically termed "the Bride of the Woodlands"—a phrase which is, I think, expressive of the Hawthorn, when seen in perfect bloom. Hardly less beautiful at present is the aspect of the Blackthorn, its immediate predecessor—a wild relative of the Plum. The attractiveness of the Gorse, much loved of Linnaeus, is also supreme. David R. Williamson, Wigtonshire.

TREES AND SHRUBS.

PHILLYREA DECORA.

ANY addition that is made to the really hardy evergreen trees and shrubs is always welcome. This *Phillyrea*, better known as *P. Vilmariana*, is not a new plant—having been discovered in 1866, and put into cultivation shortly afterwards, but it is not yet so generally grown as it ought to be. It is one of the evergreen shrubs that might very well be used to displace to a great extent the clipped Laurels and Pontic *Rhododendrons* that still predominate in too many gardens. It is very distinct from the other hardy *Phillyreas* in its leaves, which measure 3 inches to 5 inches in length, and are of a lanceolate form, of a very dark green tint, and firm, almost hard texture. The species grows naturally into a shapely rounded bush, wide-spreading, and twice or thrice as wide as it is high. In the nursery of Messrs. Paul & Son, Cheshunt, it is now flowering profusely. The flowers are produced in dense clusters in the leaf-axils, and from the nodes of two or three-year old wood. They are small, rather Privet-like, and fragrant. The species is a native of Lazistan, on

the south-eastern shores of the Black Sea. When it was new in cultivation, it was the practice in nurseries to propagate it by grafting it on stocks of the Privet. This may be the case now, but it ought to cease, for it can be rooted easily enough by cuttings, and grafted plants neither grow so freely, nor have such fine foliage. They are, moreover, apt to be short-lived.

PRUNUS (CERASUS) PODDUM.

The Cherries are now at their best, and are the loveliest of all hardy trees flowering in early May. This species, a native of the mountains of Bhotan and Sikkim at altitudes of 8,000 feet and upwards, is one of the rarest. Yet judging by a single tree in the arboretum at Kew, about 20 feet high and laden with blossom, it may be ranked with the most beautiful of the Cherries. Its most distinctive character, especially when compared with the two

years ago [and figured in this Journal last week. Ed.]. For most of that time it has been cultivated in the Coombe Wood Nursery, near Kingston, Surrey. It is an evergreen of very distinct appearance, having long, straight branches, closely set with stiff spiny leaves. These leaves are orbicular or heart shaped, from $\frac{3}{4}$ inch to $1\frac{1}{2}$ inch across, with very short stalks, and are armed with spines $\frac{1}{4}$ inch long. The flowers, of a bright golden-yellow, are borne in dense clusters packed in amongst the leaves—the clusters being sessile, and the individual flower only shortly stalked. It is, however, the hard textured leaves that give the species so well marked a character. I have seen only small specimens, one of which (from the Coombe Wood Nursery) is flowering at Kew, but it is said in the fully grown state to be a stout bush 6 feet to 7 feet high. It must then be a shrub of both singular and attractive appearance. *W. J. B.*

and brownish-purple veining, and minute spotting in the lower two thirds. The lower sepals are ovate, and of a primrose-yellow hue. The petals are broad, and wavy at the edge, the blades in form and colour approaching those of *C. hirsutissimum*, rose purple on yellowish ground, and with purplish spotting on the inner half. Lip honey-yellow-coloured, with minute purple spots. Staminode fleshy and broad, yellowish, with a green plate in the centre, and thickly set with black hairs. The entire flower exhibits a downy appearance, and although not of brilliant colouring, it is an attractive flower. The only known plant is that in the possession of H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr., Mr. Thurgood).

ODONTOGLOSSUM CRISPUM.

This Orchid, in its many beautiful forms, has been the favourite of the year with orchidists, and



FIG. 114.—*ARUNDINARIA NOBILIS*, IN THE GARDENS AT PENJERRICK, CORNWALL. (SEE P. 309.)

(Photographed by S. Wyndham Fitzherbert, Esq.)

double Japanese Cherries (*P. pseudocerasus* and *P. serrulata*), as well as the Gean (*P. Avium*), is the graceful weeping habit of its lower branches, the other species mentioned being erect or horizontal. It bears its flowers, each 1 inch across and pure white, in fascicles at the nodes of the previous year's growth, and is equal to any of the Cherries in the profuseness of its blossom. On its native mountains, forms are said to occur with flowers varying from pure white to deep rose. It has fruited at Kew several times, bearing a red Cherry on a long slender stalk. The fruit is moderately sweet, and of good flavour. The rather inelegant specific name is probably a native name for the tree.

BERBERIS CONGESTIFLORA HAKEOIDES.

This Berberry, one of the rarest of the hardy sorts, is a native of Chili, and was introduced, I believe, by one of the Veitchian collectors forty

ORCHID NOTES AND GLEANINGS.

CYPRIPEDIUM × *AJAX* (*CHAMBERLAINIANUM* ♂, × *GERMINYANUM* ♀).

A VERY remarkable and stately flower, soft in tint, and with the brownish-purple dotting and colouring disposed on its yellow-tinted flowers in a wonderful manner, rendering it an object for long and close observation. The leaves are broad and green, and closely resemble those of *C. Chamberlainianum*; the inflorescence in the example now in flower is one-flowered, and show traces of *Cypridium villosum* and *C. hirsutissimum*, the parents of *C. × Germinyanum*; while the staminode, the form of the lip, and the upper sepal indicate the influence of *C. Chamberlainianum*. The dorsal sepal is of a honey-yellow, with a ciliate, white margin,

it is certain to hold its own as a popular plant worthy of being grown in quantity. A fine selection of blooms, sent by R. Brooman-White, Esq., Arddarroch, Garelochhead (gr., Mr. Cole), by their beauty and great variety well explain why the species is held in such esteem. All the blooms are large and finely formed, but both in form and colour there is such variety that no two are exactly alike. One is a gigantic white flower, with a rose tint on the back of the segments, and a large brown blotch on the lip; its opposite is entirely of two shades of rose-purple, with two red-brown blotches on the lateral sepals. One rose-tinted flower is speckled with small reddish blotches, in the manner shown in the superb *O. c. Starlight*, which was one of Mr. Brooman-White's introductions. All are good, and although two or three would be selected by everyone as the best, the choice afterwards would be difficult.

ODONTOGLOSSUM CITROSMUM ALBUM.

A fine inflorescence of a pure white form of *Odontoglossum citrosmum*, in which even the yellow callus shown on the original form of *O. c. album* which flowered in 1867 is nearly suppressed, is sent by R. Brooman-White, Esq., Arddarroch, Garelochhead (gr., Mr. Cole). Varieties of *Odontoglossum citrosmum* which are nearly white are not

CURIOSITIES OF THE GLASS-HOUSE AND GARDEN.

(Continued from p. 101, vol. xxviii.)

II.—ABOUT COCKROACHES.

I WAS reminded of my intention to continue this series of papers by a conversation I had recently with a large Orchid-grower. After discussing a

that his knowledge in this direction was very limited. "Are they natives, or do they come from America, or the East?" I asked. My friend replied that as the creatures had a special preference for the warmest places, they probably came from a warm place, and he should be disposed therefore to regard them as true orientals. His description, however, seemed to me rather to point to what is known as the American cockroach; but as we have several species of these destructive creatures in our gardens and conservatories, it may be well to look at the family as a whole.

In the course of my career as a student of Nature, I have had more than one opportunity of making the acquaintance of the members of this voracious group. Some years ago it fell to my lot to visit the Far East. Among my outfit I had a pair of kid shoes, and when I settled down on the banks of the Pearly River, 100 miles from Hong-kong, I placed my shoes in a wardrobe along with a number of other articles of wearing apparel. Going one day to take out a coat, I observed something amiss with my shoes, and on inspecting them closely found that the kid had nearly all been eaten off, so that they were only fit to be cast out, not even worthy of being trodden under foot of men. Some time after this I was invited out to dinner; the weather was very warm, and dinner was, as usual, served in the cool of the day. I arrayed myself in a new suit of clothes, as became so important an event, and presented myself to mine host. Next morning I found to my horror that my coat-sleeve was riddled with holes from top to bottom. The holes varied in size from a halfpenny downwards, the largest being nearest the shoulder. So completely was the sleeve spoiled, that I had to send for the tailor and have a new one inserted. I found out in time that the same hungry monster that had feasted on my kids, had also riddled my coat. During dinner, the Chinese servant who had waited at table had spilled some greasy substance down my sleeve, and this had proved so toothsome to the greedy cockroach, that, regardless of my feelings, it had licked up all the grease, and in so doing had carried away the cloth as well! Since when the cockroach and I have been on unusually intimate terms, which may account for my knowing more about his ways than most people do.

I do not aver that he is entirely to blame. For doubtless his office is that of scavenger, and his special business is to clear out rubbish. Now, for the genuine scavenger, bottle-washer, street-sweep, sanitary inspector, and all the other members of that important genus, I have the profoundest respect. Each has his place, each is what may be called a necessary evil. So with our cockroach. The misfortune is that, owing to lack of proper education, it sometimes confuses the useful and agreeable with the worthless.

I find I am speaking about the cockroach as though, like the ostrich or giraffe, the cameleopard or kangaroo, it were limited to one species. Let me say at once that there are several different species, and that three or four different kinds may be found in our houses and gardens in England by those who are devoted to the collecting of such choice creatures; but in the matter of development they are all practically alike. The common species is that which infests our kitchens and bake-houses, and goes in many places by the name of "black clocks." A second kind is known as the American cockroach, because it is found as a native in the warmer parts of the New World. The creature who favoured me with such kindly attentions in China was yet another species, and is usually spoken of as the Asiatic or Oriental cockroach. He is more active on the wing than the others, and during summer evenings in the East may be found flying about the house, and alighting on the walls or furniture, where it frequently meets with a fatal blow from the slipper of the lord of the manor. I have killed scores, if not hundreds, of these creatures by rapping them sharply over the backs with a bit of shoe-leather, and if they have not been at



FIG. 115.—A CROSS-BRED DIANTHUS = CORNATION URIAN PIKE AND A SWEET WILLIAM.

(See p. 301 in *Gardeners' Chronicle*, May 11.)

care, but during the many years the plant has been in cultivation few pure white varieties have appeared, and probably not one in which the yellow on the lip, which is one of the most tenacious colours, has been so nearly obliterated. *O. citrosmum* grows best in Orchid-pans or baskets suspended in an intermediate house, and so situated that its heavy pendulous inflorescences show to the best advantage. J. O'B.

number of points of interest—seedlings, fertilisation, soils, homes, and haunts, and the like—my friend remarked that Orchids required a good deal of attention. "They are liable to a good many pests," said he. I asked him to tell me what they were. "To begin with," he replied, "there are the cockroaches. They attack the buds, eat off the petals, and do a lot of mischief. "What cockroaches are they?" I inquired. And I then found

once thrown away, a large tarantula has soon appeared on the scene, removed the carcase, and feasted on its juices, as the cockroach had previously done on my grease-spotted coat.

Some years ago I had an opportunity of studying the life-history of the American cockroach, and the accompanying sketches are from the drawings which I made at the time from living specimens in the larval (A), wingless (B), and perfect (C) stages (see fig. 116, p. 313). If the figures are compared with those which represent the common British species it will be seen that they differ considerably in appearance. It may be said that while the "black clocks" are usually regarded with repugnance and disgust, the American species is quite a handsome insect in its perfect stage, the colour being a rich brown, and the appearance of the wings attractive. The species which is most familiar to us, and thrives so rapidly in our cellars as to give the impression that it is a native, was originally unknown in this country, having been brought from some foreign country in vessels trading with the East.

Many people speak of the creature as though it were a beetle, but though it is very similar to a beetle in appearance, it needs only a little careful observation to detect the difference. It is nearly related to the grasshoppers, crickets, and locusts, all of which are voracious feeders, but especially the locusts. Nearly all the species are possessed of a foetid smell, and a couple of little organs, shaped something like pouches, are to be found on each side of the body between the fifth and sixth divisions of the abdomen, which seem to be the organs concerned in the manufacture or storing of the material which causes the disagreeable odour.

The female cockroach lays eggs, which are about a sixth of an inch in length in the case of the common species, and are oval in shape. Instead of being laid as those of a bird or butterfly are, we find them enclosed in a Bean shaped capsule or egg case, which is of a considerable size relatively to that of the mother cockroach. This will be easily understood when we say that nearly twenty eggs occupy each case, the eggs being arranged in two rows like Peas in their swad. When a suitable spot has been found for her precious charge, the mother drops the capsule, and secures it to the place by a sticky substance which is secreted from her own person. In due time the young ones emerge, and are able to set themselves free from their swaddling bands, by means of a liquid which dissolves the cement by which the edges of the case are glued together. Thus from the egg we get the larva, just as from the egg of the butterfly we obtain the caterpillar. When first hatched, the young cockroach is much lighter in colour than the adult, a fact which has led the housewife sometimes to say that she has seen a white blackbettle! From time to time, as the creature greedily takes its food it casts its skin or moults, and after a while the wings appear. The young cockroach, as will be seen by the illustration, is wingless; but it is seldom that the wings of the adult are used for purposes of flight in our English kitchens and gardens, though we have seen the cockroach in the East use its wings freely. As the moulting proceeds the insect grows, adding not only to the number of segments or rings on the abdomen, but also to the length of the antennae, or cigar-shaped "feelers," and the number of facets in the compound eye. It takes months and even years for the cockroach to reach the perfect adult stage. Then moulting ceases, wings and feelers, eyes, and other organs are completely developed, and the insect can claim to have reached the ultimate stage in its life-story.

It will have been gathered from what has already been said that the genus cockroach is omnivorous. The species found in Lapland is so voracious that, according to Linnæus, it has been known, in conjunction with another equally greedy monster, to devour the whole stock of dried but unsalted fish of a Lap village in one day. In Russia, another species feeds in its native condition on the leaves of the Birch. The oriental

species found its way into the Mediterranean ages ago by the established trade routes, and seems to have been known in England as early as the sixteenth century. In 1868 the American species was reported to be established at the Zoological Gardens. Ten years ago it abounded in nursery gardens near Carlisle, where I had occasion to study its life history.

As to the food of cockroaches, we can hardly except any animal or vegetable substance from the long list of their depredations. Bark, leaves, the pith of living Cycads, paper, woollen clothes, sugar, cheese, bread, flesh, fish, leather, the dead bodies of their own species, all are greedily consumed. Cucumber, too, they will eat, though it agrees with them horribly. In the matter of temperature they are less easy to please; they are extremely fond of warmth. Cold is the only check, and an unwarmed room during an English winter is more than they can endure. They are strictly nocturnal and shun the light, although when long unmolested, they become bolder.

I have no space to dwell upon the various portions of the creature's anatomy; nor is this necessary, seeing that every book on biology gives the particulars—taking the cockroach as a type—while two able writers have devoted an entire volume to the study of this single group. Cockroaches have their uses, as every other creature of God has, and in their place they render excellent service in clearing away animal and other matter which would be likely to breed disease and corruption; but when they attack Orchids and Cucumbers, bulbs and blossoms, boots and shoes, books and papers, coats and dresses, they become mischievous, and need to be kept in check. Perhaps we might turn them to good account, as they do in other lands. The Chinese eat them greedily; the Russians also use them as a remedy against dropsy; and we are even informed that in the New World cockroach pills and cockroach tea are not unknown. *A Sussex Naturalist.*

PLANT NOTES.

CHLIDANTHUS EHRENBURGI (Kunth).

THIS Mexican species now in flower with me, differs in some respects from the Andine forms of *C. fragrans*, as described by Mr. Baker in his *Handbook of the Amaryllidæ*, and is figured by M. Van Houtte in the *Flore des Serres*, t. 326, and by Mrs. Loudon in the *Ladies' Flower Garden*.

C. Ehrenbergi appears to be a taller plant in all respects, and carries its flowers at a nearly horizontal position instead of erect. The flowers are also carried on distinct pedicels instead of being sessile; but the only point of specific divergence appears in the three outer segments being markedly wider than the three inner. In *Ehrenbergi*, also, three of the stamens are notably longer than the other three. Whether such differences justify the use of the name "*Ehrenbergi*" in a specific sense, or whether we should regard this plant as a geographical form of a monotypic genus, is a subject which may be discussed by botanists. At least, the introduction of the Mexican form bids fair to be of some benefit to gardens, as it has proved hardy during the past winter at Isleworth, and is now pushing strongly through the ground. *A. Worsley.*

PHACELIA GLANDULOSA.

Deep gentian blue and deep Tyrian purple are two very desirable colours. Among hardy flowers they are unfortunately as rare as they are desirable. I can only think of *Gentiana acaulis*, some dark forms of the smaller *Gentians*, *Phacelia campanularia*, and *Salvia patens* (if it be admitted hardy), as representing the former; and *Primula capitata* and *Phacelia Parryi*, at its best, as representing the latter. When a family which has done so well with its annuals gives us perennials, there is fair ground for hopefulness. There are two perennial *Phacelias* in cultivation, both hailing

from Colorado, and with me both have been failures. *P. sericea* I have never been able to bring through the winter. Two plants of *P. glandulosa*, raised originally from seed, have survived this last winter, and are now in flower; the flowers, borne in an elongated head, are of a dull, uninteresting mauve colour, and the exerted stamens give them a bottle-brush appearance. The foliage is rather pretty, and the plant is apparently quite dwarf.

During an exploration of my friend Mr. Selie Leonard's interesting garden at Guildford, I came on a plant of *Geum rivale* which took my fancy greatly. The flowers differed considerably from the type both in size and colour. The petals were a good deal longer, and the colour was a charming cherry-red. Mr. Leonard was kind enough to spare me a piece, which has grown here into a very pretty plant. Doubtless it could be procured from the nursery with which Mr. Leonard is associated. *A. K. Bulley, Neston, Cheshire.*

ERICA AUSTRALIS.

Of several hardy Heaths now in flower this species is, perhaps, in the brightness and richness of its flowers, the most attractive. Being a native of Portugal and Spain, it is not absolutely hardy here in all winters, except in our south and south-western counties, and other localities with a similar climate. Still, no frost has occurred within the last six years in the London district sufficiently severe to injure it, and as it can be increased by means of seeds and cuttings, no great difficulty need be experienced in keeping it in cultivation. Yet it is one of the most uncommon of all the Heaths that can be grown outside in Britain. A plant, 2 feet or 3 feet high, and crowded with blossoms, is now very beautiful in the collection of *Ericas* at Kew. In colour the flowers resemble those of *E. mediterranea*, as they do also in shape and size, but they are of a brighter purple, and the arrangement is different. In *E. australis* the flowers are in terminal clusters, generally four flowers in each, but in *E. mediterranea* they are axillary. The latter also comes into flower some weeks earlier. One great value of *E. australis* is the length of time it remains in flower—a period of ten weeks or more. It was introduced in 1763 by the then Earl of Coventry, and is said to grow to about 8 feet in height. *W. J. Bean.*

A VETERAN GARDENER.

IT is seldom that a gardener is able to actively follow his calling for so many years as Mr. John W. Miller has done. His retirement from the charge of Lord Foley's garden at Ruxley Lodge, Esher, we announced on p. 256. Born in Argyllshire, where his father held the situation as gardener for fifty-two years, Mr. Miller, after working for a considerable period at home, was apprenticed at Erskine House, Renfrewshire, the residence of Lord Blantyre. In 1849 this young Scotsman, fortified by an unusual amount of energy and considerable ambition, crossed the border and came to Earditon, in Worcestershire, to be gardener to Sir William Smith, Bart. Whilst there, Mr. Miller was called upon to furnish a very large conservatory, which he planted with Orange-trees and other species of decorative shrubs and Roses in fashion at that date. He says:—

"There was nothing to equal this conservatory in those days nearer than Chatsworth or Trentham. It contained all sorts of creepers, and the best Roses. Best of all, however, were the Oranges of sorts, including Shaddocks and Lemons. They were planted in four beds, which were well drained, and carefully made. They were composed of turfy loam of old grass meadows, the same as we used for making the Peach borders, and our Peaches used to swell to 12 ounces in weight, the Nectarines being as large in proportion.

"To the Royal Horticultural Society's meetings in those days, which were held in Regent Street, I sent on several occasions collections of varie-

ties of Oranges, Lemons, and Shaddocks, of which Dr. Lindley seemed to think very highly, for he wrote to me that he had them placed in his front hall, for his friends to admire; and he begged me to write an article on their cultivation. This I did, and it was published in the *Gardeners' Chronicle*, January 3, 1857, p. 4. I think there are now very few able to attend the Royal Horticultural Society's meetings who did so fifty years ago, when these Oranges were exhibited."

Mr. Miller soon began to exhibit fruit, especially Peaches and Nectarines, and was awarded his first silver medal by the Royal Botanic Society at Regent's Park in 1853, which he has to the present day, and it is one among a large number won since that date.

After remaining with Sir W. Smith for nearly fifteen years, Mr. Miller was gardener at Astle Hall, in Cheshire, for two years; then spent another year in the nurseries of Messrs. Jas. Veitch & Sons, Chelsea, and of Messrs. Dickson, Chester. He then entered the service of Lord Foley, about which he says:—

"I went to Worksop Manor, in the 'Dukeries,' Notts, in 1864, where all the details of gardening were carried out in true nobleman's style. I soon began to take a place amongst exhibitors of fruit, including the leading gardeners of the Dukeries of those days, at Worksop, Handsworth, Leeds, the Yorkshire Gala, Manchester, and Oxford. When the Royal Horticultural Society held an exhibition in conjunction with the Royal Agricultural, I won against all England the prize of an eight-day clock, offered by the *Journal of Horticulture*.

"Upon the death of the late Lord Foley, several changes took place at Worksop Manor, and for some time I had charge of Clumber Garden, as well as those at Worksop Manor, both places belonging to the trustees of the late Duke of Newcastle. I effected many alterations which I deemed improvements in the pleasure grounds, under the late Mrs. Hope, of the Deepdene, near Dorking, and blew up many large tree-roots with dynamite. The late Mr. W. E. Gladstone and other trustees witnessed this operation, also the lifting and planting of large old Yews to form shelters, upon the system of Barron & Sons, Elvaston. We planted as late as the middle of July, but did not lose one specimen, thanks largely to having a sufficient supply of water.

"At Clumber at the time of the great fire in the mansion at four o'clock on a February morning during a fall of snow, above the front door the blaze must have been 50 feet over the roof. Inside the front hall stood two large marble statues of the poet Thomson and of Napoleon. That of Thomson broke up with the heat; Napoleon, being accustomed to fire, was only discoloured. Messengers were sent out in all directions for assistance for fire-engines: Welbeck, Thoresby, Worksop, and others. By daylight the whole centre of the mansion was in full blaze. Owing to the presence of the lake there was no scarcity of water, or not a stone of the grand mansion would have been left."

Whilst at Clumber, Mr. Miller raised a new Melon, which he named after William Tillery, then gardener at Welbeck. It remained one of the most popular Melons for many years, and has been used as a parent in the raising of some of the green-fleshed varieties of the present day.

Mr. Miller left the Duke of Newcastle's employ in 1882 after eighteen years' service; and he is justly proud of a flattering testimonial written by Mr. Gladstone (a trustee) at 10, Downing Street, on March 24 of that year. After spending a year with Mr. Hargreaves in Hampshire, Mr. Miller was asked to again serve the Foley family at Ruxley Lodge, Esher, which Lady Foley had bought after Lord Foley's death at Worksop. Whilst at Ruxley Lodge, Mr. Miller has been awarded twenty-four medals by the Royal Horticultural Society for exhibits of fruit, Mushrooms, and plants. He now says:—

"I am in my seventy-ninth year, but had it

not been for failing health, following a very bad cold, it would have been the height of my ambition to have planted our new conservatory, nearly 200 feet long, and proportionately wide and high, and to have seen the Oranges and other plants established, as I did those I planted more than half a century ago at Eardiston."

Mr. Miller evidently comes of a hardy stock, for besides being the son of a gardener who held one position for fifty-two years, his younger brother after being gardener at Combe Abbey for nearly forty years, commenced to establish a nursery business for himself at Berkswell, near Coventry. Mr. Miller has three sons, who are head gardeners, the eldest to Lord Bentinck at Underley Hall, Westmoreland; and the other two in New

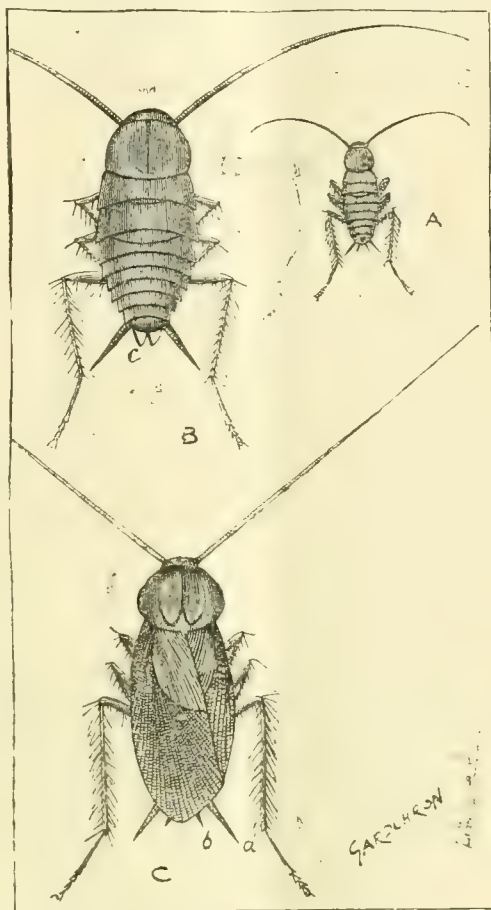


FIG. 116.—AMERICAN COCKROACH.

- A, Young or larval stage.
B, Full grown, but wingless.
C, Perfect insect. a, Cigar-shaped processes or cerci;
b, smaller cerci.

(Natural size.—from fresh specimens.)

Zealand. His only daughter is the wife of Mr. Pentland, who is head gardener and bailiff in Gloucestershire. He has three other sons, one of them with Messrs. Carter Page & Co., seedsmen; another holds a position as goods agent at Leicester under the Great Central Railway Company.

The many friends of Mr. Miller will be glad to hear that he has been granted an annuity by Lord Foley, who has shown the greatest respect for his old servant, and his wife, who has managed the Ruxley dairy for eighteen years, and is seventy-six years of age. P.

IRISES OF THE PERSICA GROUP.

THE well-known *Iris persica* has, in Asia Minor, a number of closely-related species, which I have discovered during my residence in this country for an uninterrupted period of six years. The bulbs of all these species are like those of *Iris persica* in sending up the characteristic fleshy roots from the base.

IRIS HELDREICHI.

The most beautiful of all the early blooming Irises is *I. Heldreichi*, which has already been described as *I. stenophylla* (a name which, for various reasons, I do not recognise). It was illustrated in the *Gardeners' Chronicle* of March 18, 1900. This species is notable for its charming blue colour and narrow greyish-green leaves.

IRIS TAURI.

A new dark violet species is *Iris tauri*, which has bulbs like those of *I. persica*. The leaf-sheaths white; leaves very broad, of a lively green on the upper surface, and dull green below. They appear simultaneously with the flowers. Flower-sheath greenish-yellow; flowers—petals spatulate, folded at the edges. The leaf-sheaths are white, leaves very broad (as in *persica*), bright green on the upper surface, dull green underneath. They appear at the same time as the flowers. Flower-sheaths greenish-yellow, outer petals blue; inner petals about 1½ inch long, bright violet, greenish at the back; the middle is feathered white with stripes of dark violet, the centre stripe being bright cadmium-yellow. On the reflexed tip is a black-violet blotch. The stamens and anthers are light violet in colour; the falls whitish-violet in colour; the petal-like style is violet, more deeply coloured towards the centre, the stigma pale mauve. The fruit is not as yet known.

This *Iris* is found in alpine pastures of the Eastern Taurus at a height of 6,500 feet, and also in the upper wooded regions in forests of *Juniperus excelsa*, at a height of 4,550 feet. There it blooms with the melting of the snow, sometimes at the end of February, but generally at the beginning of March. It is one of the most beautiful of the early-flowering Irises.

IRIS HAUSKNECHTI.

Under the name of *Iris persica magna* I have distributed a plant which has proved its value. I call it *Iris Hausknechti*, in honour of the well known authority on the oriental flora. The original name was given wrongly to the plant in Weimar; it has nothing to do with the true *persica*. This species is distinguished by large, silver-grey flowers marked with red. The leaves are nearly as broad as those of *Iris persica*, and are characterised more especially by their white membranous margin. When growing, the leaves of this species roll themselves together, and appear to be bent in every direction.

IRIS BOLLEANA.

As a fourth interesting species of the *Persica* group, I would call attention to *Iris Bolleana*, which I have named after my friend Dr. C. Bolle, a well-known German botanist. This beautiful *Iris* has very narrow leaves, and like those of the before-mentioned species, they are marked by their white, membranous edges; the immature leaves are also limp, and curled about in every direction. The flower is a clear yellow in colour, but on the tip of the innermost perigonial bract is a bright violet blotch. Sometimes this is wanting, and then the whole flower is yellow. Since it is not possible just now to give an accurate and scientific description of these beautiful species that I have discovered, I shall hope in time to make up for it by giving some illustrations in future.

With regard to their habitat, the four Irises I have mentioned are very different. The last-named, *Iris Bolleana*, is found on low limestone hills in the neighbourhood of the sea, at a height of from 650 to 950 feet. *Iris Hausknechti* grows in the undergrowth of forests of *Pinus Bruttia*, with a special preference for dry, over-grown, hilly slopes. Only rarely does *Iris Heldreichi* find its way up into this region, but then it blooms as early as January; its home is in the upper belt of forests, and there it is found under the beautiful variety of *Pinus Laricio* in fine red lam. At the beginning of March, it unfolds its superb flowers. *Iris Tauri* may almost be considered as an alpine plant; it inhabits the high, broad table-

land of the Western Taurus, at a height of 6,500 ft., and still more frequently it is found at a height of 4,500 ft., in forests of *Juniperus excelsa*. Here, as I have before said, this charming plant blooms at the end of February. My plants have nothing to do with *Iris persica purpurea* of the trade, yet it is quite possible that *Iris persica purpurea* is equally entitled to be regarded as a typical species. Bulbs imported from Holland bloom here, but imperfectly, in December. *W. Siehe, Hortus Orientalis, Mersina.*

NOTICES OF BOOKS.

DAHLIAS, CACTUS, E CANNAS, FLORIFERAS SUA HISTORIA, CULTURA, E APPLICAÇÃO NOS JARDINS. By H. Cayeux.

THIS is a neatly printed paper-covered brochure of forty pages, by an author who has already been noticed in these columns, and the work now before us is, like those previously mentioned, written in the Portuguese language.

The major portion of Mr. Cayeux's present contribution to horticultural literature is devoted to the Cactus Dahlia, and deals with the origin and introduction of the flower, definitions of what are Cactus and what are decorative Dahlias, a page or two on single-flowered Cactus varieties, seedling, and other methods of propagation, and general culture. Then follows a list of the best fifty varieties, with descriptions, another of twenty-five decorative, and a third list of the ten best singles. The Cannas are treated in a somewhat similar way, although, perhaps, more briefly, culture and descriptive lists of these being also supplied. There are fifteen illustrations in black-and-white, and the little work will, no doubt, be acceptable to those who are interested in the flowers mentioned, and who can follow the author in the Portuguese tongue. *C. H. P.*

A GARDEN OF SIMPLES. By Martha Bockée Flint. (London: David Nutt, 57 & 59, Long Acre.)

THIS book, recently published in America also, now deals with old English garden-lore, anon with modern Transatlantic life, the two subjects curiously blended into a combination as harmonious as that of a Catalpa and a Celandine. The writer gives us a series of chatty chapters, from the first of which the volume is named. Much of the information consists of quotations from the most familiar of our old herbals and gardening books (those of Gerard, Parkinson, and Evelyn), strung together pleasantly enough by one who is evidently much impressed by the " quaintness " and Old World flavour of the style. The average British public will, for their part, feel greater interest in the American parts of the book, and we recommend to their notice the account of Liberty Tea. This beverage was brewed from the leaves of *Ceanothus americanus* towards the end of the eighteenth century, when imported Tea had been largely refused by American women, until the import clause in the Revenue Act should be repealed. Various other Tea substitutes were tried, as has been the case this side also of the Atlantic, but few receive any permanent support.

When Miss Flint speaks of the flowers of Chaucer and of Spenser, she appeals again rather to her own countrywomen, for with us the subject is a well-worn one, and nothing more seems possible to be discovered as to the exact plants intended in certain doubtful allusions.

From this familiar ground it is pleasant to turn to subjects where the author is more at home, and her own originality has more scope. She describes to us the pleasures of berry-gathering:—"Picking Huckleberries [*Gaylussacia resinosa*, allied to *Vaccinium*] is, from some points of view, the pleasantest berrying. No torn skirts, nor scratched and stained fingers, but usually a far-stretching view, and always alluring surroundings. The sturdy shrublets select very charming society; Sweet Fern, and Basil, and Gerardia, Liberty Tea and Wild

Indigo (*Baptisia tinctoria*) crowd about them. There is a Huckleberry-field known through the surrounding country as The Murdoch, where, in the shade of half-grown Chestnuts, one can sit on cushiony tussocks of moss, and fill one's basket within arm's reach, while all about one are the August flowers—the Fire-Lily, lifting its chalice to the sun, the pale blue Lobelia, the Wild Majoram, and, strange survival among the soft green carpeting of the modern grasses, are sheets of crisp Reindeer Moss, pearl-tinted, or of faint sea-green, speaking of plant zones altogether distinct and distant."

A chapter on Indian plant names strikes another note, and alludes to an interesting subject of study. In fact, as has been shown, the title of the book applies to the first few pages of it only, the rest being occupied by a series of sketches of various phases of plant-lore; the form of the volume suggesting that possibly these various chapters have previously appeared in a magazine. They are sure to please, for there appears to be a large public who admire chatty books of this description.

THE WEEK'S WORK.

THE HARDY FRUIT GARDEN.

By C. HERRIN.

General remarks.—At the time of writing, the weather is cold, dull, and stormy, with indications of this sort of conditions continuing, which may be disastrous to later blossoming fruits, and a check to the growth of wall-trees as well as others. Peaches, Nectarines, Apricots, and Plums, should have the protective coverings gradually removed, as the foliage will now serve as a protection against such frosts as are likely to occur in the southern counties. If there are portable copings, allow these to remain for a week or two longer. Fish-netting or other materials that have been used to cover the trees should be dried and stored away in a dry place.

Grafted stocks should be examined, and if the clay is cracked, rub it over with some soft clay with wet hands, so as to fill the cracks, it being needful to exclude rain and air.

Disbudding of fruit-trees should be continued until all unnecessary growth has been removed, and as the growth of Peach and Nectarine-trees is forward, most of the surplus shoots will have now been removed. The points of very strong shoots, which it is intended to retain, should be pinched out, and one or more that will start therefrom later given the lead. Any conveniently placed foreright shoots on Apricots may be left for the formation of spurs, as on such as these the fruits are produced as freely and as well as on wood of the previous year's growth. If space admits, a shoot may also be allowed to extend from the upper side at the base of the shoots of the previous year's growth. The Apricot being apt to lose its branches from gumming and a sort of paralysis, if there are signs of a coming loss of branches, neighbouring young shoots should be retained, which will, in course of time, fill up the spaces rendered vacant by the branches dying off.

Plums and Pears will require a somewhat similar treatment, it being good practice to remove the weaker and badly-placed shoots, and to retain only the number that is required to cover the wall without overcrowding the trees with growths. Where the trees have filled their allotted space, and further extension is impossible, the points of such shoots should be pinched back whilst still soft to the second or third leaf.

Out-of-door Vines should have all surplus shoots removed, and only the strongest and best placed retained; and in order to avoid overcrowding, one to each foot of rod will be sufficient number to be retained.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. I. MEASURES, Esq., Cambridge Lodge, Flodden Road, Camberwell.

The East Indian-house.—As the weather becomes warmer use must be made of the lower ventilators, and during unusually hot spells, which may be expected later, the roof ventilators also must be opened during the warmest part of the day, to prevent the atmosphere becoming too "stuffy." But

I do not advocate the use of the roof ventilators more than is really necessary, for the reason that as soon as these are opened the moisture of the house is allowed to escape, and this is not good for the plants. I would rather advise that the lower ventilators be made large enough to ensure at all times a free circulation of air and the necessary temperature, without having to use those in the roof. When it does become necessary to use these latter, they should be opened on the leeward side of the house, so as to prevent, as far as possible, direct draughts reaching the plants. Damp down frequently during warm, bright weather, but during dull, damp days, once in the morning and again in the afternoon will be sufficient. Be sure to close these warm divisions early in the afternoon, so that the sun may cause the temperature to rise considerably, and render but little fire-heat necessary during the early part of the evening. If the *Dendrobiums* are afforded a house to themselves, a thin coat of whitening may now be put on the glass, or a thin tiffany blind used over them, to protect the young growths from becoming scorched by the sun. This house should be closed as soon after two o'clock as possible, and the atmosphere kept very moist, syringing the plants overhead sufficiently early to permit the moisture to evaporate from the foliage whilst the temperature remains high.

In the Cattleya and intermediate-houses, the damping of the stages and floors will need to be done three or four times on hot days, and every effort should be made to keep the atmosphere charged with moisture. Little fire-heat will be required during the day except in dull weather; but it is necessary that the hot-water pipes should be fairly warm during night. Do not allow the temperature of these divisions to fall much below 60° during the growing season.

The Cypripedium-houses will be looking gay with flowers of the summer-flowering section, such as *C. barbatum*, *C. Lawrenceanum*, *C. Curtisii*, and the numerous hybrids of this class will soon be in bloom; but it is a section that is unusually backward this year. This may be an advantage, as they will give a succession of flowers after the *Cattleyas* have bloomed. As the summer-flowering *Cypripediums* pass out of bloom, they should be examined, and any repotting or top-dressing that is needed performed forthwith. A search should be made for black Thrips, which attack the lower sides of the leaves, and deposit their eggs there. If any be found, the house should be fumigated, and the leaves carefully sponged to remove the deposit, and so avert the permanent disfigurement of the leaves.

The cool divisions will not need any more fire-heat. Keep the atmosphere as cool as possible by the free use of the lower ventilators whenever the outside conditions permit, and by the use of shading and frequent damping of the floors, &c.

THE FLOWER GARDEN.

By T. H. SLADE, Gardener to Lord POLTMOORE, Poltmore Park, Exeter.

Azalea indica alba and other varieties.—The Indian Azaleas are not often planted in the open ground, the impression among gardeners being that they are not hardy, and for the reason that they are usually found in greenhouses. That the plant is hardy I have fully proved, not only in the mild west, but in other parts of the country, and I see no reason why these plants should not be planted in the pleasure-grounds in suitable places and in suitable soil, that is, sandy peat or sandy loam, with leaf-soil incorporated with it. The best examples of *A. indica alba* I have observed in the open ground were growing in a Surrey garden. They were situated near a brook, and had been planted for some years, for the plants were partly smothered by neighbouring shrubs, and these being cut back, the plants soon appropriated the added space. The staple was sandy peat. I have planted them in a gravelly soil, but they did not thrive in that kind of soil, being subject to infestation by Thrips, which caused the leaves to fall. Some *Azalea indica* planted at Poltmore some three years since in sandy loam are doing well. Any plants that have become too large for the greenhouse may be planted out-of-doors at this season whilst growth is still active. The ground should be trenched 2 feet deep, and if in the least degree heavy or retentive, leaf-mould or the refuse soil from the potting-bench should be incorporated with it. Should the plants be dry at the root, the balls should be immersed in water for an hour or two,

according to size. In planting, the top of the ball must not be placed beneath the surface of the ground, or only very slightly, a shallow basin being left for holding water. The sides of the ball should be slightly loosened with a pointed stick, and the soil well rammed in round each plant. There will not be much growth made the first year, but in the second year good progress will be made. It is of importance with these plants, as with *Rhododendrons*, that all the seed-capsules be removed early, not allowing them to remain and ripen seed. *Azaleas* have a good effect as single specimens, and the wood of such plants becomes thoroughly ripened, and as a consequence they flower well the first season after planting. The plants should be afforded water occasionally. *A. indica alba*, *A. amena*: The hybrids from these two plants, viz., Mrs. Carmichael, Caldwell, Lady Musgrave, &c., afford variety when mixed with or put in proximity with the ordinary varieties.

Hardy Herbaceous Perennials.—These plants are now becoming attractive, and the surface of the beds and borders should be hoed often. Plants should be got in readiness for planting the spaces now occupied by early-flowering bulbs, *Myosotis*, &c. Strong growing perennials that throw up many growths should have some of these removed, which will tend to strengthen those that are retained, and to furnish finer blooms, and at the same time prevent encroachment upon weaker-growing plants.

Portulacas.—Sow seeds on dry banks and borders where other species of plants do not succeed. *Portulaca* seed may also be sown in 3-inch pots, and planted out without disturbing at the roots.

FRUITS UNDER GLASS.

By MAICOLM MCINTYRE, Gardener to Sir CHAS. TENNANT, The Glen, Innerleithen, Peeblesshire.

Pines.—The recent changeable weather has called for very careful attention to Pines, especially to those plants now maturing fruit. They require a moderately moist atmosphere, and a high temperature, and these conditions render them susceptible to injury from various causes. A sudden out-burst of sun may scorch the crowns of the plants, if ventilation be not afforded almost instantly. Water should be afforded with discrimination, and it is necessary to examine each plant at least once a week, to see whether or not the soil requires water. Plants that have artificial bottom-heat under them will need more water than those for which the heat is provided by fermenting material. I have never found any better stimulant for Pines than guano-water at the strength of about 1 lb. of pure guano to 20 gallons of rain-water; and this may be afforded pretty freely. Maintain a day temperature of 80° to 90°. A small quantity of air may be admitted at the top of the house when the temperature rises to 80°; close early in the afternoon at 85°. Fireheat should be employed to prevent the temperature falling below 70° at night, and to raise it to 75° in the day; and the bottom-heat may be kept at 80° to 90°. This should be steady, but a few degrees variation in the atmosphere is of no great consequence. Syringe the house, and spray the plants over two or three times a week according to the weather; and maintain the atmosphere in such a condition as is likely to secure the perfect development of the fruits. In those houses in which fruits are ripening, a drier atmosphere is necessary; and when the fruits show signs of colouring, afford water but sparingly.

Cucumbers.—Aphides must be kept under by fumigating with XL. All vaporising liquid, which is both a safe and effectual remedy. Red spider is a worse enemy, and is almost sure to put in an appearance. If this pest has begun to increase in number, remove the worst leaves, and keep the air charged with ammonia, by damping the floor in the evening with guano-water, supplying the roots of the plants with the same about twice a week. The hot-water pipes may be brushed over thinly with sulphur, mixed with skim milk to make it adhesive. Take care not to apply the sulphur when the pipes are very hot. Do not permit the roots of the plants to suffer from lack of water, and afford water at the same temperature as the atmosphere of the house. Plants that have been fruiting during the winter and early spring will now be showing signs of exhaustion, and had better be removed, that young plants may be substituted for them. Take away all the old soil, and wash the stone or brick building with lime-wash, thoroughly cleansing the house. Afford

the young plants fresh and sweet material in which to root. Any that appear weak must have the male flowers and the first fruits removed, stopping the shoots at every third or fourth joint. Take away all weakly and superfluous growths. Shade from strong sunshine for an hour or two during the day, especially in houses facing south. Let this be done before the plants flag, or injury will be done. Houses facing east and west will not require any shading. Little or no fire-heat need be afforded by day after 8 A.M. until 5 P.M. Syringe the plants moderately between 3 and 4 P.M., and maintain a moist atmosphere all day by frequently damping the floors. Sow seeds for raising plants for cultivation in pits and frames. A good bottom-heat may be obtained at this season by the less decomposed material from Vine borders or exhausted hot-beds, mixed with about one-fourth of fresh material. Close the pits and frames early in the afternoon, and cover them closely at night. Prepare for planting out ridge Cucumbers under hand-lights, which should not be done until the plants have been hardened off.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HERSEY PACKE, Esq., Prestwood Hall, Loughborough.

The Rose House.—Tea and Hybrid Tea varieties will now be nearly out of flower. Shorten the flowering-shoots of those varieties which are grown in pots for the decoration of the conservatory, and after carefully hardening off, remove to a sheltered position outside, and plunge the pots in coal-ashes. Afford them water when this is necessary, and syringe the foliage after hot days. A little protection must be afforded them at night until the foliage has become hardened. Plants growing in the house permanently, as *Maréchal Niel*, *Belle Lyonnaise*, *Niphetos*, *Perle des Jardins*, *Bouquet d'Or*, and *Cheshunt Hybrid*, should be relieved of all superfluous or very weak growths; at the same time shorten the flowering-shoots, and tie-in the best growths for future flowering. Afford liberal applications of liquid farmyard manure, diluted with six times its quantity of rain-water. Syringe the foliage early in the afternoon. Vaporise or syringe the plants with *Quassia* extract as often as may be necessary. Half a pint of extract will be sufficient to use with 4 gallons of rain-water, and it is best applied in a lukewarm condition. This is a very effectual remedy for aphids. Hybrid Perpetual varieties are still affording flowers for decoration, and when these are past, the plants may be removed out-of-doors. Do not prune these Roses severely, but simply remove the tips of the flowering growths, and place the plants in a position that is fully exposed to sunshine.

Malmaison Carnations.—Afford support to the flowering shoots by looping them loosely to a central stick. To prevent "spindling growths," constant and liberal ventilation must be afforded. The plants will need a slight shade during the hottest part of the day. Liquid manure-water and soot-water may be used about once a fortnight. Thin out the flowering buds, if very large blooms are required. We remove the buds from the base of the central flower, leaving sufficient length of stem between the flower and the buds situated lower down the stem. These later buds, when developed, can be cut with a good length of stem, and are useful for furnishing vases, &c. Successional plants should be afforded stakes, and if the pots are filled with roots, a little stimulant also.

Imantophyllum miniatum.—As these plants go out of flower, they may be divided or repotted; but this is not necessary unless the pots are very full of roots. Use a compost of good loam, leaf-soil, and well-decayed manure, three parts of the former to one each of the latter. Afford them a temperature of 60°, and syringe them frequently. Pot firmly, and sufficiently deep to bury the surface roots and part of the stem of old plants. Plants that do not require to be repotted may be top-dressed with a compost of loam, decayed manure, and bone-meal.

The Greenhouse.—During the next four months constant ventilation may be afforded greenhouse plants, the amount of which should be regulated by the temperature out of doors. After the flowering stage has passed, prune-in the growths of *Plumbago capensis* which have bloomed, and syringe the plants frequently. Thin out the weak shoots of

Tracheospermum jasminoides, and encourage free growth by occasional waterings with weak manure-water. *Lonicera sempervirens* may be pruned moderately at this season if the flowers have past. Tie-in the growing shoots of *Tacsonias*, *Bignonias*, *Swainsonias*, *Lapagerias*, and *Clematis indivisa lobata*. Place neat stakes to the flowering shoots of herbaceous *Calceolarias*, and remove the plants to the greenhouse. Afford stakes to flowering *Schizanthus*, and afford them frequent applications of soot-water. During warm days the paths of the house may now be damped more frequently.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bicton, East Budleigh, Devonshire.

Thinning of Crops.—This necessary work calls for especial mention at this season, but it should be done in showery weather if possible. Onions need to be thinned first, leaving the plants at the present time 2 to 3 inches apart, but again thinning them in two or three weeks' time to 4 or 6 inches apart. Use a pointed stick and gently raise the young seedlings, while with the other hand the superfluous plants from the soil are lifted. Press the soil firmly around those that are left, and fill up any vacancies there may be as the work proceeds, but do not insert the plants deeply. The plants upon one portion of the bed may be left a little closer together if Onions are required for drawing whilst young. Carrots should be thinned as soon as the little plants can be well laid hold of, but it is unnecessary to thin Early Horn varieties severely, as they can be pulled in a young state for use. About 4 inches apart is a good distance for these; and for the main crop, such as *Model*, *Scarlet Intermediate*, &c., 6 to 8 inches. Make another sowing of *Model*, *Early Gem*, or *Scarlet Horn*, towards the end of the month. Parsnips should be afforded a space of 8 or 10 inches between the plants; ply the flat hoe between all the above-named crops as soon as the thinning has been finished.

Lettuces sown on warm borders at the end of February or early in March require to be thinned out to 10 inches apart. If it is intended to replant those pulled out, the bed should be well watered first. Carefully lift the plants with a fork, and avoid breaking the tap-root. Plant them in drills 4 or 5 inches deep, and afford water to them till established.

Seakale.—New plantations will require to be disbudded, using a small label, or the haft of a budding-knife for the purpose. First remove the soil down to the crown, and carefully rub off all except the strongest shoot, which will form the crown for forcing next season. Afford permanent beds a good dressing of rotten stable manure, forking it in between the crowns before growth has much advanced. Salt is a capital fertiliser for this vegetable, and frequent applications of drainage from the farmyard may be applied advantageously during the summer.

Tomatos.—Except in the northern counties, Tomatos may be planted out-of-doors during the coming week. The foot of a south wall is the best position for this crop, though in a favourable season fruits will ripen in an open position upon plants trained to stout stakes 3 to 4 feet long, and confined to one stem, and stopped when the top of the stake is reached. Put the plants out at 2 feet 6 in. apart, and copiously afford water in dry weather. Remove all laterals, and thin out part of the foliage where it is crowded, thinning the fruits to half-a-dozen well-ripened fruits on a bunch. Feed the plants with cow-manure water, or Clay's Fertiliser, when the fruits are set.

Herbs, such as Sweet Basil, Marjoram, &c., that were sown under glass, should be planted on a warm border after being hardened.

AN INCH OF RAIN.—What does an inch of rain mean? Few persons have a definite idea. An acre, if calculated out, will prove to be 6,272,640 square inches. An inch deep of water on this acre will be as many cubic inches of water, which at 231 to the gallon, is equal to 27,154 gallons. This immense quantity of water will weigh 225,190 lb., or 101 tons. One hundredth of an inch (·01) alone is equal to over 1 ton of water to the acre. One inch of rain is equal to 4½ gallons a square yard, or 101 tons per acre.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY,	MAY 21	<div> <div> Key Guild Annual Meeting and Dinner at Holborn Restaurant, 7 o'clock P.M. </div> <div> Royal Horticultural Society's Show in the Temple Gardens (3 days). </div> <div> Gardeners' Royal Benevolent Institution (Annual Dinner at Hotel Metropole). </div> <div> Bath and West and Southern Counties Show at Croydon (5 days). </div> </div>
WEDNESDAY,	MAY 22	
FRIDAY,	MAY 24	<div> Linnean Society, Anniversary Meeting. </div>
SATURDAY,	MAY 25	<div> Manchester Orchid Exhibition commences—closes May 30. </div>

SALES.

TUESDAY NEXT.—Special Sale of Orchids in Flower, at Protheroe & Morris' Rooms.

WEDNESDAY NEXT.—Lilies, Begonias, Carnations, Border Plants, Ferns, Palms, &c., at Protheroe & Morris' Rooms.

—Palms, Azaleas, Ficus, Standard Bays, Bedding Plants, Bulbs, &c., at Pollexfen & Morrison's Rooms, Pilgrim Street, E.C.

THURSDAY NEXT.—Important Sale of Established Orchids, from some of the most noted collections in the country, at Protheroe & Morris' Rooms.

FRIDAY NEXT.—Imported and Established Orchids, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick—56° 1'.

ACTUAL TEMPERATURES:—

LONDON.—May 15 (6 P.M.): Max. 76°; Min. 47°.

May 16, 11 A.M.—Fine, N.E. wind slight.

PROVINCES.—May 15 (6 P.M.): Max. 63°, Home Counties; Min., 47°, N.E. Scotland.

The Prospects of a Hall or of a Garden for the Royal Horticultural Society.

HORTICULTURISTS are awaiting with interest the results of the last special meeting of the Royal Horticultural Society. Some misapprehensions apparently prevail which it may be well to remove,

and to do so we must go back to the annual meeting in 1900, when the formation of a new garden to replace that at Chiswick was first definitely recommended in the *Annual Report* as an appropriate means of celebrating the centenary of the Society in 1904. The Fellows present on that occasion undoubtedly accepted the Council's proposal, though absolutely no details were then afforded. Later on, the Limsfield site was proposed as a suitable one, and, on the strength of the previous general approval to the scheme of obtaining a new garden, the Fellows were asked to endorse this particular selection of the Council without having had any adequate information as to the cost of purchase, of preparation, and of future maintenance. Naturally, those Fellows who remembered that the Society has twice before been on the very verge of bankruptcy felt alarmed at the financial risks involved in carrying out such a proposal. Not only was no information afforded as to the means by which this risk was to be met, but when the site was inspected, it was thought by most, but not by all, of the visitors to be highly unsuitable. The situation was indeed beautiful and the soil varied. The great and fatal drawback was the difficulty of access. Some scheme of arrangement with the Surrey County Council, and the formation of a School of Horticulture, was hinted at, but no definite information was afforded, and we are unable even now to afford further particulars on this point. The result was that the Limsfield site was abandoned as unsuitable.

The Council, considering itself still bound by the decision of the meeting referred to, and also of the special general meeting on April 28 last year, when the Limsfield plan was rejected, took great pains and trouble to find another site, and after many visits to various localities, decided to recommend to the Fellows the acquisition of the land at Farningham. They found this site so suddenly, that in this case, also, no adequate information could be furnished till the very last moment. Not till the actual time of the meeting, on April 23, was any scheme showing an estimate of cost and maintenance furnished. We had urged the publication of such details over and over again, but till Mr. HARRY VEITCH embodied them in his speech at the meeting on April 23 last, the Fellows were left without any information on this most important matter. Obviously, from the late date at which these details were put forth, it was quite impossible to examine them; but they will, at any rate, be available, with the necessary modifications, in any future scheme that may be proposed. The Farningham site, as our readers know, was found to be as unsuitable as that at Limsfield; in consequence the meeting convened for the purpose of considering the matter, affirmed that this was not a proper way of celebrating the centenary. This was, in truth, the only matter formally under consideration.

The decision of this last meeting does not preclude the selection of some other more suitable site for a garden, nor does it give a mandate to the Council to secure a site for a Hall. Obviously, the general feeling of the Fellows present was emphatically in favour of a Hall, although nothing definite was said or done in the matter, beyond the instant promise of £3,000 towards the funds.

The question then as to what is the best way of celebrating the centenary is still open. It would seem, from what has happened, that we might readily celebrate the centenary in some appropriate manner, without incurring the risks or responsibilities either of a Hall or of a garden. If that matter were settled we should have plenty of time to consider the the Hall proposal and the Garden question, as we have Chiswick for nearly twenty years to come.

So far as the garden is concerned, it is surely possible to adopt some less ambitious proposal than either the Limsfield or the Farningham sites. A garden of ten or twelve acres in a readily accessible site should certainly offer no particular difficulties of acquisition or management, and would be more useful and less costly to the Society than a garden of 50 acres ever could be.

As to the Hall, everybody acknowledges the desirability—nay, the necessity—of obtaining, by hire or by purchase, a suitable site for an Exhibition Hall. The present arrangement, as also that in Victoria Street, suggested to the Council by a committee comprising the late Mr. GEORGE DEAL, Mr. GEORGE PAUL, and Dr. MASTERS, was avowedly only provisional, but nothing better has up till now been proposed. It would seem as if it might be possible to secure the use of some other exhibition-hall better suited for the purpose than the present Drill Hall, without incurring the enormous financial responsibilities connected with the purchase of a site and the erection of a suitable building.

In fact, the objections that we felt bound to raise to the purchase and management of land by the Society, on the scale and in the localities proposed, apply with equal or greater force to

the Hall scheme. There is, however, this very important difference: that while outside assistance, in the present feeling of the Fellows, could hardly be expected for the purchase and management of land, there is already promise of substantial assistance to the proposal for a Hall. Perhaps some scheme may be floated wherein a Hall may be provided by a company, or a syndicate, and the Society itself relieved of the greater part of the financial responsibility. With the history of what we may call two failures, and the dispersion of the former library and other effects, the Society cannot afford to run such tremendous risks a third time.

The last meeting was so enthusiastic that we cannot doubt that some arrangement would be forthcoming if a resolute attempt were made. The approaching Temple Show will afford individual fellows an opportunity for discussing the matter, which we hope will be turned to account.

Disease in Plants.

WHEN a doctor is summoned to the bed-side of a patient, he listens attentively to the narra-

tive given by the sick man or his friends, forming meanwhile his own general impressions from the aspect of the patient, and from what he sees and hears. These preliminary proceedings are generally quite inadequate, and, so far as the account, and especially the theories framed by the patient are concerned, almost always misleading if not wholly incorrect. Having gained as much information as possible in this way, and having made the necessary allowances, the doctor proceeds to investigate "the case" for himself. He learns all he can about the family history, mode of life, and "constitution" of his patient, what previous illnesses he may have suffered from; when, and in what manner the present sickness began, and what has been its progress. Having thus obtained a general knowledge of the state of affairs, the doctor proceeds to investigate, in due and regular sequence, the condition and working of the several organs of the body. And not till he has made this thorough investigation of "signs" that he sees and can personally detect, and of "symptoms" that are made known to him by the patient, does he venture on either diagnosis or prognosis, still less, unless he be a quack, on methods of treatment.

Neither the patient nor his friends desire, or could in most cases appreciate, the inductions that the doctor makes. They wish to know, in general terms only, what is the matter, what are the prospects of recovery, and what are the measures to be taken to secure that end.

Plant doctors up to this time have been too communicative, and not sufficiently practical. If they see a fungus they forthwith measure its spores in fractions of a millimetre, they compare it with other organisms of a similar nature, and they draw up a highly technical description, which is quite unintelligible and equally useless to the persons for whose benefit it is supposed to be framed. Now, we are far from wishing to depreciate these proceedings. For purposes of scientific research they are absolutely essential. It is likewise essential that the fungi be cultivated by the plant doctor, and their life-history accurately studied, as upon the information so obtained depend in most cases our methods of combating disease or preventing its onset. This cultivation takes time, and hence it is not always possible to give an immediate or even a speedy answer to enquirers. But the details to which we have alluded are

appropriate only to the student. The busy cultivator has not the time nor the means to make the necessary investigations. He wants general results, and specially indications for treatment.

Many, perhaps we may say most, treatises and papers hitherto written have been drawn up by experts for experts, with too little attention to the requirements of cultivators. A book now before us proceeds to a large extent on different lines.* The very title, "*Disease in Plants*" (the italics are ours), indicates this. No one is more competent to compile such a book as this than Prof. MARSHALL WARD. The work is apparently based on a series of lectures, though we are not expressly told so; nevertheless, the following passage shows the intention of the writer:—"The purpose of these essays is to treat the subject of disease in plants with special reference to the patient itself, and to describe the symptoms [signs] it exhibits and the course of the malady, with only such references to the agents which induce or cause disease as are necessary to an intelligent understanding of the subject, and of the kind of treatment called for." The first part is devoted to an admirably clear and concise account of the living plant and what it does, to the biology of the soil—a comparatively new but most important subject, and to a short account of hybridisation and selection.

Part II. is devoted to diseases in plants, their causes, nature, diffusion, and the remedial measures to be adopted. Sundry chapters are given to "symptoms" of disease, which in medical phraseology should be "signs," and these should be attentively read by cultivators. The inclusion of scale-insects among symptoms seems rather incongruous, but this is a matter of little moment. "Silver-leaf" disease, characterised by the detachment of the epidermis from the subjacent tissues, is, in our experience, confined to members of the Rosaceæ, and is as common out-of-doors as under glass, so that we do not think it has any special connection with hot summers. Not only are plants considered in their medical aspects, but their surgical injuries are also discussed, such as wounds of various kinds, including the burrowing excavations made by certain insects in leaf or branch. Among excrescences we do not find mention made of the warts on the under surface of Vine-leaves, which are so common in vineries where the proper balance between temperature, moisture, and ventilation is not maintained. Under "Gummosis," we do not find any reference to BELJERINCK'S observations on *Coryneum*.

The chapter on Life and Death is full of suggestive matter; the more so, as we know of but one book intended for the use of cultivators that deals with this subject, and in that only in a much less complete manner than in Prof. WARD'S book.

The book has copious references to the literature of the subject, but these are not always sufficiently explicit; for instance, to cite the *Gardeners' Chronicle* without specifying the date of publication and page is simply to embarrass the enquirer. The author has evidently been hampered by his desire to keep the book within convenient limits, a circumstance which has led to undue concision; but, on the whole, we have nothing but praise to bestow upon a book which will be so useful to the intelligent cultivator, that no garden library should be without it.

* *Disease in Plants*. By H. Marshall Ward, Sc.D. (Macmillan & Co.)

ROYAL HORTICULTURAL SOCIETY'S TEMPLE SHOW.—The fourteenth great flower show, held annually in the Inner Temple Gardens, Thames Embankment, will open on Wednesday next at 12.30. Judging from the large number of entries received, the show promises to be quite up to its usual standard of excellence. The Secretary informs us that the following well-known amateurs are among the names of intending exhibitors:—Lord Aldenham, vegetables; Lord Hillingdon, Carnations; Lord Rothschild, Moss Roses; Lord Wantage, V.C., K.C.B., fruit; Sir Trevor Lawrence, Bart., Orchids; Sir Joseph Pease, Bart., fruit; Sir Fredk. Wigan, Bart., Orchids; Capt. Holford, C.I.E., Hippeastrums; Leopold de Rothschild, Orchids (*Vanda teres*); Alex. Henderson, M.P., fruit and vegetables; John Rutherford, M.P., Orchids; Ludwig Mond, F.R.S., Orchids; R. I. Measures, insectivorous plants; Henry Little, new Orchids; de Barri Crawshaw, new Orchids; A. Meyers, Calceolarias; Purnell Purnell, alpine and Sempervivums; Mrs. Hart, Japanese trees.

ROYAL NATIONAL TULIP SOCIETY.—A Tulip Conference and the Eighth Annual Southern Exhibition of the above Society will be held under the auspices of the Birmingham Botanical and Horticultural Society, on Thursday, May 23, 1901, in the Botanical Gardens, Edgbaston, Birmingham. The schedule is of a comprehensive character, and comprises competitions with rectified, feathered and flamed varieties, feathered, flamed, and breeder Tulips, feathered bizarres, roses and byblennens, and flamed bizarres, roses and byblennens. Special prizes, "Samuel Barlow," for the best pair of rectified Tulips, viz., medals, silver-gilt and silver, and money prizes will be given. Championship medals will be awarded by the Birmingham Society to the winners of the most prizes. The exhibition will be open to the public from 3 P.M. until 9 P.M. Members of the Royal National Tulip Society will be admitted by ticket, to be obtained from C. W. NEEDHAM. The President of the Society is Rev. F. D. HORNER, M.A., Burton-in-Lonsdale; Hon. Sec., A. D. HALL, Esq., The College, Wye, Kent; and Hon. Treasurer, C. W. NEEDHAM, Thorn Bank, Hale, Altrincham.

THE BRADFORD HORTICULTURAL SOCIETY will hold its annual exhibition at the Peel Park Hotel on August 30 and 31 next. The schedule of prizes includes 111 classes, and the Secretary is Mr. W. D. B. PEARSON, Peel Park Hotel, Bradford.

THE ROYAL HORTICULTURAL SOCIETY OF SOUTHAMPTON has issued a supplementary prize list in connection with its Chrysanthemum Show to be held in the autumn, which includes a Queen Victoria Memorial Challenge Trophy, value £40, raised by public subscription. Several extra prizes of Silver and Bronze Medals are also offered for competition at the Society's summer show.

SUMMER SHOW AT ARUNDEL CASTLE.—An exhibition will be held on September 11 next, in the grounds at Arundel Castle, by permission of his Grace the Duke of NORFOLK. It is described as the Arundel, Littlehampton, and District Agricultural, Horticultural, and Poultry Society, which long designation conveys some idea of the variety of exhibits expected. The Secretary is Mr. C. BARTLETT, Arundel.

MR. A. J. TEMPLE.—This veteran horticulturist, for the last twelve years head gardener to Sir MATHEW WILSON, Bart., Eshton Hall, Gargrave, Yorkshire, is retiring from active service at the end of the present month, after, as he writes us, forty years' practice in England, Scotland, Ireland, and Wales.

A SWEET PEA EXHIBITION.—The schedule of prizes to be offered by the National Sweet Pea Society at its exhibition at the Royal Aquarium, Westminster, on July 25, 26, includes twenty-one classes, seven of which will illustrate the use of this flower in floral decorations. Most of the other classes call for a certain number of distinct bunches

of flowers of a particular colour, whilst the four leading classes are arranged for representative collections of varieties in thirty-six, twenty-four, twelve and six bunches. Non-members are required to pay an entrance fee.

A HORTICULTURAL SHOW will be held at Evesham on June 11, 12, and 13, in connection with the Herefordshire and Worcestershire Agricultural Society. There are thirty-four classes contained in the schedule before us, for plants, flowers, fruits, and vegetables. The Secretary is Mr. FRANK IDIENS, Evesham.

"GREENHOUSE CONSTRUCTION AND HEATING"—This manual on a well-worn subject, by B. C. RAVENSCROFT, and published by L. URCOTT GILL, 170, Strand, W.C., gives descriptions of various kinds of glasshouses, pits, and frames, with directions for their construction, together with descriptions of the more common types of boilers. The subject-matter is necessarily anything but original, but the compiler has acted with laudable discretion in bringing it up abreast of modern requirements, and herein lies its usefulness to the amateur who is contemplating the erection of glass-houses and pits. In the chapter on heating, we note the remark that steam-heating has certain disadvantages, in that it parches the air, and there is more risk of an explosion in frosty weather. But the author fails to explain in what way an explosion could occur; neither can we ourselves do so, unless the water in the boiler were to freeze after the fire is lit! for the pipes are, or should be, absolutely empty of water. The remarks on boilers that have to be fixed on a higher level than the floor of the building to be heated are useful. The dome-topped and similarly formed boilers are deservedly given a word of praise; and gas and oil-heated boilers, such as amateurs often employ, come in for brief detailed treatment.

GOOSEBERRY MAY DUKE.—A note from Messrs. W. HORNE & SONS, of Perry Hill, Cliffe, Rochester, under date of May 8, informs us that they had on that day sent their first picking of this variety of Gooseberry to Covent Garden market. This may be considered a very early variety in a late spring like the present one.

THE PLANTING OF MEMORIAL TREES AT BLYTHSWOOD.—The Duke and Duchess of FIFE, while at Blythwood for the Glasgow Exhibition opening, each planted a Plane-tree in the grounds. Among other commemorative trees at Blythwood are one planted by Queen VICTORIA, one by the present Empress of RUSSIA, and others by King EDWARD and Queen ALEXANDRA when, as Prince and Princess of WALES, they visited the mansion.

MESSRS. HURST & SONS' CONCERT.—There was vocal and instrumental music at the London Tavern, Fenchurch Street, on May 8, arranged for Messrs. HURST & SONS' *employés* and friends. Such concerts organised by a firm's *employés* show with what good spirit these men go about their work. Those who took an active part in the proceedings included the following gentlemen from Messrs. HURST'S warehouse in Houndsditch:—Messrs. A. Cox, D. Fairley, V. F. Cummings, T. A. Baldwin, J. E. Dixon, and the inimitable R. C. Tucker, with Mr. E. Sherwood and T. N. Cox as conductors. A "Seedsman's Staff Society" might be the means of helping our horticultural charities.

MADRESFIELD COURT GARDENS.—By the kind permission of Earl BEAUCHAMP, K.C.M.G., these beautiful gardens were again open to the public on Thursday, the 9th inst., on behalf of the Worcester Auxiliary of the Gardeners' Royal Benevolent Institution. A small fee was charged, and the Auxiliary Committee took charge of the gates. The weather was most unfavourable, heavy thunder and thunder-storms being prevalent the whole afternoon. This was very provoking to the Committee, after their President's kind offer to choose any day they thought proper throughout the season.

o select such an unfortunate day; besides, it was equally or more so disappointing to the residents and visitors to Malvern, Worcester, and neighbourhood, who could not venture out in such inclement weather. The gardens looked at their best, especially the broad masses of spring flowers naturalised in the grass; the slopes of the spring garden proper, and the highly effective groups of flowering shrubs, for which these gardens are famous. About £11 were taken at the gates, which was really more than could be expected. Many were the wishes that the day could be postponed, and that His Lordship would repeat his kindness by allowing a second day, which he did on the last occasion, in similar weather, and similar circumstances.

PALMS AT KEW.—Our valued correspondent "W. W." informs us that the following Palms are now in flower or in fruit in the Palm-house, Royal Gardens, Kew:—*Astrocaryum Malybo*, Colombia; *A. Ayri*, Brazil; *Calyptracalyx spicatus*, Moluccas; *Chamaedorea oblongata*, Brazil; *Didymosperma porphyrocarpon*, Java; *D. tremulum*, Siam; *Exorhiza Wendlandiana*, Fiji; *Hyophorbe indica*, Mascarene Islands; *Phytelephas macrocarpa*, Peru; *Ptychosperma gracilis*, New Ireland; *P. elegans*, Australia; *P. McArthurii*, Australia; *Ravenia Hildebrandtii*, Comoro Islands; *Rhapis flabelliformis*, China and Japan; *Sabal Blackburniana*, Bermuda; *Synechanthus fibrosus*, Guatemala; and *Wallichia densiflora*, Himalaya.

THE BATH AND WEST AND SOUTHERN COUNTIES SOCIETY.—The annual exhibition of this old-established Society will take place this year at Croydon on May 22 to 27 inclusive. Horticulture will be accommodated in a lofty pavilion specially constructed for the purpose. There will be a display of choice exotic plants and flowers, which will be arranged with the view of illustrating the beautiful effects which can be obtained by skilful groupings and combinations of colour. There will also be an exhibition of appliances to illustrate the drying and evaporation of fruit and vegetables, with explanatory lectures in a building erected for the purpose.

ROYAL VISIT TO KEW.—We read in the daily Press that His Majesty the KING drove through the Royal Gardens on Sunday last on his way to Kew Cottage, and was accorded a very cordial welcome. The Royal carriage was brought almost to a halt near to the Palm-house! so eager were the people in their desire to greet the King.

THE CHISWICK GARDENS OF THE ROYAL HORTICULTURAL SOCIETY are looking very well at the present time. Peach and Nectarine trees upon the walls out of doors have set a good crop of fruits; the numerous Pea trials appear very promising, and the late-flowering Tulips a few days ago were capital. We noticed a fine group of *Caladiums* in one of the plant houses, whilst another contains some well-grown plants of *Nicotiana sylvestris*, a distinct species, with very slender flowers of pure white. The tubes of the flowers are $3\frac{1}{2}$ inches long, but the flowers are only $\frac{1}{2}$ inch across when fully expanded. They are sweetly scented, and are fully expanded and pendent during the day, but at evening they assume a horizontal position. Our readers may remember that this species was recommended an Award of Merit by the Floral Committee of the Royal Horticultural Society on July 25, 1899, when it was shown by Mr. LEOPOLD DE ROTHSCHILD, Gunnersbury House, Acton (gr., Mr. JAS. HUDSON). It is rather early to speak of the vineries, but in these, as in the Peach-houses and Fig-house, appearances are satisfactory.

STOCK-TAKING: APRIL.—Trade and Navigation returns for the past month show that though the value of the exports does not increase with the quantity, yet that the imports have increased enormously in volume. The value of the imports for last month is put at £46,392,892, against

£42,681,876 for the same period last year, thus showing an increase of £3,711,016. Of course "Budget" prospects have always a disorganising effect on trade, but the great increase of the month is on food and drink, duty free (£3,125,778, which swallows up all the losses. Sugar, of course, has been affected—more's the pity, considering its importance as an article of diet always "in evidence." Our usual extract from the "summary" table is as follows:—

IMPORTS.	1900.	1901.	Difference.
	£	£	£
Total value ...	42,681,876	46,392,892	+3,711,016
(A.) Articles of food and drink—duty free ...	14,295,130	17,420,898	+3,125,778
(B.) Articles of food & drink—dutiable ...	1,803,620	1,935,960	+127,340
Raw materials for textile manufactures ...	7,326,745	8,269,851	+883,106
Raw materials for sundry industries and manufactures ...	4,807,635	4,313,054	-494,581
(A.) Miscellaneous articles ...	1,289,437	1,214,142	-75,295
(B.) Parcel Post ...	88,855	89,097	+242

In relation to the imports of fruit, roots, and vegetables, we have the following interesting and suggestive figures:

IMPORTS.	1900.	1901.	Difference.
	Cwt.	Cwt.	Cwt.
Fruits, raw:—			
Apples ...	89,601	103,461	+13,860
Apricots and Peaches .....	.....	17	+17
Bananas... bunches	111,738	180,587	+68,849
Grapes ...	1,519	1,129	-390
Lemons ...	72,310	99,991	+27,681
Nuts—Almonds ...	5,041	4,317	-724
Others, used as fruit	64,713	49,588	-15,125
Oranges ...	614,399	574,398	-40,001
Pears ...	196	1,293	+1,097
Plums ...	45	7	-38
Strawberries ...	.....	17	+17
Unenumerated, raw ...	5,634	4,802	-832
Dried fruit:—			
Currants, home consumption ...	38,381	45,372	+6,991
Raisins, do. ...	13,957	16,802	+2,845
Vegetables, raw:—			
Onions ... bush.	533,890	791,900	+257,190
Potatoes ... cwt.	868,936	1,144,550	+275,614
Tomatoes ... "	44,746	57,007	+12,261
Vegetables, raw, unenumerated ... value	£74,269	£51,741	-£22,528

It remains to be noticed that the imports for the past four months reach the total value of £178,500,328, as against £169,874,767 for the same period in the previous year, showing an increase of £8,625,561.

EXPORTS.

We find exports to be still on the minus side, but not to a very large amount. Of course it is very easy to account for this—internal Russia has now to be added to the uncertain quantities; South Africa and China we have had with us for some time now. The total exports for April are valued at £21,987,033, compared with £22,645,147—or a decrease of £658,114. We need not specify the items leading up to this figure, but note, in conclusion that the total exports for the past four months amounted to £92,799,312, against £94,765,499—a decrease of £1,966,187, as compared with the same period last year. Let us hope that next month's figures will show none of this.

DESTRUCTION OF USEFUL BIRDS.—According to *Nature* of March 21, the issue of the *Revue Scientifique (Revue Russe)* of March 9 contains a long and interesting article by M. LOUIS ADRIEN LEVAT on the destruction of birds, especially by means of

traps and snares, which he declares to be illicit. After a brief survey of the persecution to which birds were exposed in ancient times, and reference to the fact that taking the hen sitting on her nest is expressly forbidden by the Mosaic code, the author goes on to say that during a single spring a few years ago no fewer than 1,500 nests were taken in one French province. This represents a prospective loss of about 6,000 birds, which might be expected to consume some 6,000,000 insects among them. He adds the significant observation that in the year 1860 one hundred cages filled with insectivorous birds of various kinds were exported from Baden to New South Wales; and that at the present day it would be almost impossible to send such another cargo, owing to the scarcity of these birds on the Continent. And it is not alone the disappearance of bird-life and bird-song from the country districts that is to be deplored. The effects on agriculture, horticulture, and the Grape industry are simply disastrous. Some birds, it is computed, will consume 200,000 insects per season, and others as many as 600 per day. A single insect-eating species may be the means of saving 3,200 grains of Wheat and 1,150 Grapes daily! In Hérault alone the destruction of insectivorous birds is calculated to cost the department 100,000 hectolitres of wine annually; and in some districts of France the country is practically desolated by insect ravages owing to bird-slaughter. From the fact that in France so-called sportsmen are in the habit of shooting small birds, the situation is much worse than in England. Remedial measures are urgently needed, but the author says he is preaching to deaf ears.

"FRUIT GROWER'S ANNUAL."—The edition for 1901 has been issued by Mr. SAMPSON MORGAN, and published by the Express Publishing Company, 30, Fleet Street, E.C. In the introduction the editor expresses disapproval of the grants in aid lately made to the Island of Jamaica, and forecasts failure. The Annual is filled with information of value to fruit-growers.

MR. HUNNEWELL, of Wellesley, U.S.A., to whose fine garden we have frequently alluded, has presented a sum of 25,000 dollars to the Department of Botany in Wellesley College, for the general purposes of the Department, and has thrown open his pinetum and Orchid-houses for the use of the students. *Botanical Gazette, Chicago.*

A NEW VIOLA of highly distinctive and most attractive colour, recently raised by Messrs. DOBBIE of Rothesay, has been named after the Rev. DAVID R. WILLIAMSON.

OPEN SPACES IN LONDON.—On May 1, Lord GEORGE HAMILTON, in a representative manner, "opened" Walpole Park, Ealing—a suburb in the west of the metropolis. The District Council had acquired the estate, which is situated in the centre of the town, and consists of nearly 30 acres of land, having upon it the old Manor House, formerly the residence of Mr. PERCIVAL, who was assassinated in the lobby of the House of Commons in 1812. The place is beautifully wooded, and it is stated that the Cedar-trees on the lawn at the rear of the house are some 300 years old, and thus among the very first planted in England. The last surviving daughter of Mr. PERCIVAL died last year, when possession was given to the Council, whose work is deserving of all praise.

PUBLICATIONS RECEIVED.—From the New York Experiment Station come these Bulletins:—No. 188: *Spraying for Asparagus Rust*. 1, Tests with Resin, Bordeaux Mixture; 2, The Downy Power Asparagus-sprayer. No. 189: *A Little-known Asparagus Pest* (*Agromyza simplex*, Loew). This and No. 189 by F. A. Serrine. No. 190: *Report of Analyses of Paris Green and other Insecticides in 1900*, by L. L. Van Slyke and W. H. Andrews. No. 191: *A Fruit Disease Survey of Western New York in 1900*, by F. C. Stewart, F. M. Rolfs, and F. H. Hall.—From the University of Illinois Agricultural Experiment Station, Urbana, Bulletin No. 63: *Seed Corn and some Standard*

Varieties for Illinois, by Archibald D. Shamel; and *Bulletin No. 65: Construction and Care of Earth Roads*, by Ira O. Baker.—*Amateur Gardening*, April 27. This number includes a coloured plate of a single Cactus Dahlia, Alice Lee.—*New South Wales, Statistics, History, and Resources*. By authority of the Government of New South Wales. This has a sketch-map, coloured to show the localities of different minerals, and much information useful for intending settlers. The offices in London are at Westminster Chambers, 9, Victoria Street, Westminster.—*Agricultural Journal, Cape of Good Hope*, March 28. Devoted to agriculture (crops), stock-farming, horticulture and kindred subjects.—*Le Chrysanthème*, Mars-Avril. This is the "Journal de la Société Française des Chrysanthémistes," and devoted to appropriate articles and notes.

PROLIFEROUS LEAVES.

I SEND photographs of some teratological cases which may perhaps be of interest, belonging as they do to the class of progressive monstrosities—that is, of monstrosities due to the formation of new tissues.

Fig. 117 represents a whole leaf of a Walnut-tree. The rachis of the leaf has produced on its upper

If I am not mistaken, these monstrosities of the Walnut-tree have never been noticed before, and they are very rare. I have been on the look-out for them ever since I found, a long time ago, that

Again, as the superior fibro-vascular system sends short branches into the bases of the petiolules, it was similarly to be expected that supernumerary leaflets would make their appearance on



FIG. 118.—PORTION OF WALNUT-LEAF SHOWING SUPERNUMERARY LEAFLETS.



FIG. 117.—WALNUT-LEAF WITH SUPERNUMERARY LEAFLET.

face two supernumerary leaflets, one of which is, it is true, rudimentary. Fig. 118 shows the median part of another leaf from the same tree, bearing a single supernumerary leaflet inserted on the upper face of the rachis, and more developed than the longer one of Fig. 117, owing to the fact that this second leaf was gathered later in the season.

Both leaves were taken from a tree at least eight years old, which I had caused to be pruned last spring, in order to induce the sprouting of adventitious shoots, and it is on one of these that the leaves (Figs. 117 and 118) were produced. Hence the fact that they belong to the juvenile type of Walnut-tree leaves, characterised by serrated leaflets. Now, if the supernumerary leaflets be observed, it will be seen that these also have serrated margins, thus proving the juvenile type to be virtually inherent, even to accidental outgrowths. I must add that the nerves of the supernumerary leaflets possess exactly the same internal structure as those of the normal lateral leaflets.

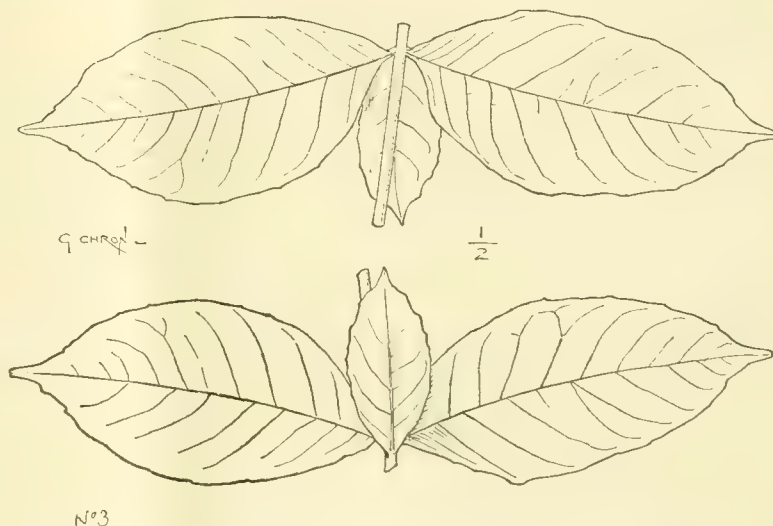


FIG. 119.—PORTIONS OF WALNUT-LEAVES WITH SUPERNUMERARY LEAFLETS.



FIG. 120.—CYCLAMEN LATIFOLIUM WITH SUPERNUMERARY LEAFLET.

the rachis of the leaves of all Juglans contains two superposed fibro vascular systems, one of which running under the upper face of the organ, necessarily suggests the idea that these leaves should possess stipels or other appendages of the upper face, such as exist on many compound leaves.

these petiolules. Well, this does also sometimes take place, as shown in Figure 119, representing part of a leaf taken from a very young tree. Although the presence of such supernumerary leaflets on the petiolules has not as yet been noticed, it is, however, much less uncommon than

their presence on the rhachis, for a friend of mine, during the last summer, found several such cases on very young trees which had been accidentally pruned.

I finally come to fig. 120, of two leaves recently found on the same plant of *Cyclamen persicum*. Each of them has given birth to a supernumerary blade, inserted on the upper face of its main nerve, thus showing a marked tendency to a pitcher-like or ascidian formation, or even to the peltation of the leaf. Here, again, it is worth noticing that the supernumerary blades present the same marginal indentations as the normal blades of the species.

These outgrowths from the upper face must be very rare in *Cyclamens*, for I have looked in vain for any mention of them in all the teratological literature available to me. Besides, although I have, during many years, always had a great number of plants of *Cyclamen latifolium* (*persicum*) growing in my houses, I have as yet never seen a single case of this sort. The structure of the leaves of *Cyclamen latifolium* is, however, rather favourable to the development of their upper face, for their main nerves contain a very nearly closed fibro-vascular system. *C. de Candolle, Geneva.*

PLANT PORTRAITS.

PEAR MATHILDE RECCY.—A Belgian Pear of medium size and good quality, ripening in November and December. *Bulletin d'Arboriculture, &c., February.*

PENTISTEMON HETEROPHYLLUS, *Revue Horticole*, April 1.

HOME CORRESPONDENCE.

INDIAN FORESTRY.—In an article on Sir G. King's services to horticulture in your last issue, the following occurs:—"Dr. T. Anderson had been Conservator of Forests in Bengal, in addition to his garden and Cinchona work; but this post was not given to King. A Conservator of Forests is so occupied with prosecuting natives for trespass of animals, tapping of rubber, and other depredations, and official struggles with the Collector and Commissioner, that botanic knowledge of trees has become of secondary importance to him. Sir Geo. King dealt with this subject in his presidential address to the Botanic Section of the British Association at Dover, when he was followed by Sir J. D. Hooker." The fact is, that the offices of Superintendent of the Calcutta Botanic Garden, and that of Conservator of Forests in Bengal, were separated in 1867, Mr. Leeds being appointed Conservator, because under the joint control no progress was being made in forest conservancy. Hence Sir G. King became Superintendent four years after a separate Conservator of Forests had been appointed, and the question of his being Conservator of Forests never arose. Among Mr. Leeds' successors as Conservator of Forests in Bengal, was Mr. J. S. Gamble, C.I.E., F.R.S., and his time as conservator was certainly not taken up in prosecuting natives, nor in official struggles with the Civil Service, and he possesses an extensive knowledge of botany. The Conservator of Forests, in Bengal, controls 4,892 sq. miles of State forests, and directs a trained staff of European and native forest officers, and it would be as foolish to entrust such a charge to a botanist who had not been specially trained in forestry, as it would be to give such a one the control of the Crown lands in the United Kingdom. Botanists have been entrusted with the control of forestry in Australia; and at the International Sylvicultural Congress at Paris last June, it was admitted that the progress of Australian forestry was nil. As regards the reference to Sir G. King's address to the botanic section of the British Association at Dover, the Secretary of State for India appointed Sir W. Thistleton-Dyer and Sir D. Brandis to enquire into Sir G. King's accusations against the botanical teaching of the forest students at Cooper's Hill. These gentlemen arrived at the conclusion that Sir G. King's accusations were unfounded, and that they were based on data, the most important of which were found not to be in accordance with the facts of the case. Botanical training afforded by such eminent men as Prof. H. Marshall Ward, F.R.S., Mr. Barber (now Superintendent of the Botanical

Survey of Southern India), and Mr. P. Groom, who now teaches botany at Cooper's Hill, must necessarily be of the very highest quality. *W. R. Fisher.*

THE SPARROW PLAGUE.—As the flowers and verdure of spring wake into fuller life, complaints of damage done by the destructive and ubiquitous sparrows are heard on all sides; but few of the sufferers except those who have gone carefully into statistics have any idea of the immense amount of injury done annually by this feathered pest. As Mr. F. T. Mott writes in his notes on "A Midland Garden," in your recent issue, "It is very difficult to see what the sparrow was created for." The same question has often arisen with regard to locusts, mosquitos, poisonous snakes, and other harmful creatures, with which the sparrow may be fittingly coupled, and, very naturally, remains unanswered. The gardener has certainly good reason to anathematise the sparrow. Crocuses, Primroses, Polyanthuses, Violets, Lobelias, and Carnations are in many places wantonly ruined; Gooseberry and Currant-buds are destroyed. The Rev. W. Wilke, Hon. Sec. of the Royal Horticultural Society, wrote in 1898:—"This year, during January, the sparrows cleared off all the bloom-buds on the Gooseberries at the Society's gardens at Chiswick. Then they attacked the Plums in February. . . . Our superintendent now despairs of any crop at all." Pear-trees suffer in like manner; seedling plants of Lettuce, Radish, Cabbages, and Cauliflowers are often torn to pieces, and Peapods ravaged just before the Peas are ripe for picking. But flowers and vegetables are merely the *hors d'œuvres* of the sparrow's menu, for, except in his nestling stage, he is essentially a grain feeder, and it is computed that corn to the value of between one and two million pounds sterling is annually consumed by the countless hosts of sparrows that we harbour on our shores, and thus the farmer has greater cause for complaint than has the gardener; indeed, in some districts, Wheat growing has had to be discontinued owing to the depredations of the sparrow. With the increase of the sparrow, a fact which has been patent to all observers of ornithological life of late years, has come a corresponding decrease in the numbers of the other species of small birds that haunt our gardens. To the average individual this is, perhaps, a matter of supreme indifference; but it is in reality of as serious import as the direct damage done by the sparrows in flower border and kitchen ground, for the banished birds are insect-feeders, whereas the adult sparrow most rigidly eschews that form of diet, in proof of which may be cited the experiment carried out a few years since at Washington, U.S.A., where over 300 sparrows were killed for purposes of dissection, and where the trees were at the same time badly infested with four species of insects, but in all the crops examined only two specimens of one species of insect were found. Martins, which from dawn to eve are hawking insects in the air, are dispossessed of their nests by the sparrows, and in some cases are entirely driven away from a locality once favoured by them. Swallows suffer in a lesser degree, and I have known the nests of fly-catchers, wrens, robins, goldfinches, and chaffinches burglariously entered and the eggs broken by the same marauders, apparently merely from malice, as some of the nests were obviously unsuited for occupation by the sparrows. I have also lately heard of a well-authenticated instance where sparrows attacked a thrush's nest and destroyed the eggs. The following sentence tritely sums up the case of the insectivorous bird, the sparrow:—"Sparrows are useless, and the insects which are given to their young are so much food taken, when they most want it, from better birds which live entirely, or nearly so, on insects, and so keep them, especially the caterpillars, down effectively in the absence of sparrows." A good deal of undeserved sympathy has been extended to the sparrow by those unacquainted with its life-history, which sympathy has been fostered by misleading statements contained in a pamphlet published by the Humanitarian League, to the effect that sparrows destroy the grubs of cockchafer, and the eggs of cockroaches deposited in stables. As a matter of fact, however, cockchafer grubs inhabit the ground in which the sparrows cannot pick; and the eggs of cockroaches are not deposited in stables or elsewhere, being carried by the female insects. With a fuller knowledge of his delinquencies, opinions regarding the harmlessness of the sparrow become considerably modified. Thus, on

p. 290, R. McLachlan, once his apologist, confessed to a change of view. The late Lord Lilford, one of Great Britain's most noted ornithologists, who at one time considered the sparrow unjustly maligned, in later years entirely recanted his opinions, and wrote, "I consider that every bird-catcher who confines his operations strictly to the taking of sparrows is a benefactor, and should be subsidised by the parish authorities." "A. D." appears to think, from his letter on p. 240, that the sparrow is a protected bird that may not be shot or poisoned. This is fortunately not the case, and everyone is at liberty to destroy the pest, and should lose no opportunity of so doing. Unless private enterprise takes the matter up, as has been done in many instances by the formation of sparrow clubs, it must in time become a national question, as it has in the United States of America, where many thousands of pounds have been spent in the endeavour to effect the sparrows' extermination; and even the meanest intelligence would scarcely advocate the desirability of permitting the loss of millions sterling of the country's wealth to continue without some attempt being made to check the drain. Any who still believe the sparrow to be a beneficent instead of a malignant creation would do well to read *The House Sparrow*, price 1s., by W. B. Tegetmeier, F.Z.S., with appendix by Miss Eleanor A. Ormerod, one of the latest recipients of the Victorian Medal of Honour from the Council of the Royal Horticultural Society. *S. W. F.*

SKYLARKS AND SEEDS.—Recently I was sowing a small plot of ground with "lawn mixture seeds," and being rather doubtful about the birds, as they seem to think one is always sowing seeds for their own special benefit, I took the precaution of adopting the time-honoured custom of tightly stretching black cotton thickly all over the ground. The next morning I saw a skylark busily picking up what I imagined to be some of the seeds I had sown the day previously. I watched it for a minute or two, thinking that when its head came in contact with the cotton it would be frightened, and fly away. To my great amusement and surprise, the bird then actually jumped upon the cotton, and there he sat looking at me with all the impudence imaginable, and not at all frightened. It was quite a lark! *Alfred Gault.*

GIANT FRENCH RANUNCULUS.—It may not be generally known that these roots are very suitable for growing in pots. After giving them a trial I find they make useful flowering plants for filling jardinières, and for placing in rooms, planted to the number of five in a 5-inch pot in the autumn, and placed in a cold frame. If brought on in a cool-house, they will make showy pots of bloom, and when treated liberally they will carry twelve to eighteen flowers to a pot. The roots were obtained from Messrs. Veitch, and of the collection the varieties that have been most satisfactory are Adelaide, rose and white; La Grandesse, cream splashed with rose; Solfaterra, Von Siebold, white and rose; Giant Crown, yellow and brown; Cosmos, light crimson; the two first-named varieties being the best. *T. H. Slade.*

BOTANISTS AND PLANT NAMES.—The short editorial note on p. 285 regarding "The Priority Rule" is of especial interest to the average gardener, who, owing to the continual changes that take place in the nomenclature of plants, and the points in which recognised authorities differ, is apt to look upon the subject as being carried out in a more or less haphazard manner, in which the desire for self-glorification by appearing as the authority for the name, plays at least a certain part. To the ordinary plant-lover, with but a limited library, this chopping and changing of names is most irritating, though to the botanist it may appear a simple matter. Illustration of my meaning is to be found in the case of that pretty, almost ever-flowering climber, *Manettia bicolor*, for such I suppose it is. The plant has been long grown in gardens under the above name, the correctness of which was never questioned. It came, therefore, as a surprise to read recently in a contemporary, under the heading of *Manettia luteo-rubra*, that "it is probably better known by the name of *M. bicolor*, which however is but a synonym of the correct one." Reference to the *Hand List of Tender Dicotyledons grown at Kew* apparently proved the correctness of this assertion, for it is there classed [as also in *Index Kewensis*, Ed.] as *M. luteo-rubra*. Judge, therefore, my

surprise to find it figured in the present number of the *Botanical Magazine* as *M. bicolor*. The second plant to mention is one which was I believe, first described by Dr. Seemann as *Lasiandra macrantha*, and as such is now generally grown. It has also been referred to the genus *Pleroma*; then it was by someone named *Tibouchina macrantha*, under which name it is, or was quite recently, grown in some of the houses at Kew, for elsewhere in the same gardens it figures as *Tibouchina semi-decandra*. This latter name is used in the *Kew Hand List* [and in *Index Kewensis*], but whether it is still the correct one only students of the latest fashion in plant-names can say with any degree of confidence. *Puzzled*.

PEACH AND NECTARINE-TREES.—The cold experienced at night lately has retarded growth, and the opening and setting of the flowers. This notwithstanding, I have great hopes of a good average set. The trees will require early attention in the matter of disbudding, and keeping the foliage clean. Green-fly have made their appearance here, calling for prompt measures to dislodge them before they cripple the young shoots, than which nothing is more injurious. Sometimes green-fly appear at a time when insecticides cannot be used, and then the only remedy that I can suggest to check their spread is syringing with clean water, or dusting the infested shoots with tobacco-powder. When the fruits are of the size of Peas, insecticides may be used with good effect, not using the insecticide of too great a strength, but employing it repeatedly, and thoroughly wetting every part until the pest is destroyed. In the matter of disbudding, readers cannot do better than follow out carefully the directions given by Mr. Herrin in his calendrical articles weekly. Afford water if there is the least reason to suspect the border to be in a dry state below; and be sure that all newly-planted trees are loose, so that they can sink as the soil settles; and that the bark is not injured in any way, the fatal disease of gumming being often the result of wounds caused by tight ligatures, pressure against nails, studs, and wire. *H. Markham, Wrotham Park Gardens, Barnet.*

THE "OLD" AURICULA.—I have the 1597 edition of *Gerard's Herbal*, and I find Chap. 262, p. 640, is devoted to the Auricula or Beares Earer. Gerard seems to have obtained most of his information from previous writers, "Mathiolus, Pena, and other herbarists." The other "herbarists" would doubtless include Clusius, who wrote on the Auricula from personal knowledge gathered by exploring the Alpine districts of the south of Europe. Gerard knew that "most of them do grow in our London gardens." The wild Auricula is figured under the name of *Auricula ursi flore luteo*, or Yellow Beares eare. The Purple Beares eare is figure 2; figure 3 is probably the *Primula pubescens*; Red Beares eare (*Auricula Ursi II. Clusii*); figure 4 is the Scarlet Beares eare, *Auricula Ursi III. Clusii*; figure 5 is the bluish-coloured Beares eare; figure 6 is a very remarkable species, if one may trust the rough cuts in this edition of Gerard. None of them is a garden variety. Gerard was not very particular about his figures, he borrowed them from Mathiolus for his 1597 edition; and Johnson evidently did not scruple to borrow even more freely from the *Rariorum Plantarum Historia* of Clusius. Probably the earliest figure of an Auricula is that published by Mathiolus in 1563. It was rather unkind of Gerard to borrow the figures of Mathiolus without acknowledgment, and declare at the same time that he did not believe his descriptions. He says "The bright red Beares eare of Mathiolus description seemeth to be rather a figure made by conceit or imagination, than by the sight of the plant itself, for we are persuaded that there is no such plant, but only a figure foisted for ostentatious sake, . . . because we have seen no such plant, neither do we believe there is any such," p. 641 of the 1597 edition. These mountain Primulas described in the old herbals of the sixteenth century, would not be likely to live long under cultivation. Early in the seventeenth century, varieties of the Auricula appeared in cultivation. It is supposed they were first brought over from the Netherlands by artisans, who were driven out of their own country by the religious persecutions. *J. Douglas.*

THE HARDINESS OF THE DELPHINIUM.—Last summer I had a number of seedling perennial Delphiniums. I pricked them out into thumb-pots.

In due course I planted out as many as I wanted, and there remained thirty-five little ones in these tiny pots on a shelf in the open garden. I did not particularly want them, but had not the heart to throw them away, and so they lived on, sometimes neglected, and sometimes afforded water, now dry, and then flooded, till the winter and its frost came. They eventually lost their leaves, and were exposed sometimes to rain and sometimes to frost. On various occasions the earth in their tiny pots was a hard frozen ball. The thermometer in a north window about 12 feet or so above the ground often registered 6° or 7° of frost, while, where the young Delphiniums were the temperature must have been 2° or 3° lower. I thought it was no use troubling any more about them, for surely, I thought, they must be all dead. However, one day in the end of January, on a mild day, I wanted to see whether they were dead or alive, I turned one out of the pot, and found it contained a mass of roots, and the tops had a tiny green spot, so I took pity on the little things and repotted them in good soil in larger pots. The pots of every one was a mass of roots, and not one of them seemed to be dead. After watering them, I put them into a warm house, and in a few days every one began to throw up its little leaves. They are now a thriving community of thirty-five. The interesting part of these facts is that the thumb-pots had had no shelter whatever, sun, rain, cold piercing wind, frost, snow, came to them, without any injury whatever, so we may take it for granted that the perennial Delphinium is one of the hardest plants to kill, except by fire! *E. Bonavia, M.D., Worthing.*

THE LATE D. T. FISH AS A WRITER.—Once upon a time Mr. Fish sent a lengthy article to the *Gardeners' Chronicle* so written that no compositor could comprehend his "copy," but did his best. After him came the printer's "reader," who also did his best; the people in Wellington Street agreed to leave it to fate and—the writer. In the week following publication came a letter from Mr. Fish, in which he seemed to complain a little, and also to note a few errata. These errata were sent to the "reader" to see what he could make of them, but that individual declined to commit himself; consequently under "Answers to Correspondents" appeared a note from the Editor to the effect that he would willingly insert the errata if only he could decipher them! *An old "Reader."*

THE APIARY.

HIVES AND STOCKS.

BEE KEEPERS should now examine their stocks, going carefully from hive to hive, and recording their condition on a small piece of cardboard or slate kept in the hive, and making similar entries in a book, so that it can be seen at a glance what is the state of each hive, the hives being numbered. If the record is kept in the hive, place a small nail inside on which to hang the card or slate. The bees in weak hives should be fed forthwith with a little syrup, and where the apiary is a good distance away they may be fed outside. "Medicated" syrup may be given at this time of the year, and if placed outside a few wood shavings or bits of straw over, should be put into it, so as to enable the bees to crawl over and consume what they require without running the risk of drowning. No time should be lost in building up the bees, so as to enable them to go to work collecting honey, as the season of collecting honey is very short, and time wasted now cannot be made up however much one may try to do so.

THE WAX-MOTH.

A keen look-out should be kept for this moth, and every one destroyed. A small quantity of naphthaline should be placed in the hives, for should the moths not be caught the stock will soon be overrun and destroyed. Every bee-keeper should have placed his orders by this date, so that he has not to run everywhere to borrow materials because the dealer has not sent his, and in a good many cases the dealer is not to blame at all. All section crates should be got ready, the sides and bars being nicely

scraped and washed, and sections made up ready to put on the hives when ready. In each case a half sheet of foundation should be placed in each section, to save the bees trouble and time, and enable them to get on with the collecting. Where shallow bars are used the same thing applies, and the bars should have the foundations wired in to keep the combs from breaking when being extracted; each bar should have a little vaseline rubbed on to prevent the bees sticking them down too securely. The body-box should have two or three new frames placed in, each with full sheets and wired, and take away the combs which are oldest, &c.; these, after being cleaned (if in good condition) can be got ready to receive a swarm. Where swarms are not required, take away the queen bee from the swarm, and return your bees in the evening. All top bars should be well scraped now, as well as at the bottom of the body-box, and new carpet and coverings placed on ready for section-crates or shallow frames. The value of honey imported into the United Kingdom during the month of March was £4,547. *Expert.*

NURSERY NOTES.

BROUGHTON ROAD NURSERY, IPSWICH.

THIS small but compact nursery, which is situated in a good neighbourhood, on the west side of the town of Ipswich, has been in the occupation of Mr. R. C. Notcutt since 1886. The nursery occupies a good position on an elevated spot near to Christchurch Park; it is restricted in extent, and largely covered with glass erections. There are two large span-roofed show or specimen-houses, in which may be seen valuable furnishing subjects, this being a part of the business at Ipswich which has much developed of late, and with it a satisfactory cut flower trade. Bedding plants are also much grown, they being in brick demand for the villa residences adjacent to the Broughton Road. There are five span roofed houses, in addition, for the culture of plants, and two lean-to houses—all full of useful stock in good condition.

Chrysanthemums have been for years prime favourites with Mr. Notcutt, and he has been a frequent exhibitor at the exhibitions of the National Chrysanthemum Society and elsewhere. It will be remembered that a few years ago he put into commerce a fine yellow Japanese bearing the name of Edith Tabor. Mr. Notcutt, though still finding a brisk demand for Chrysanthemums, is yet of opinion that there are signs of a decline in its popularity, though he thinks that good novelties will still be sought after for culture and for exhibition purposes. The employment of the Chrysanthemum for decorative purposes is likely to increase.

Something of everything which may be expected to be in demand in a residential suburb of the town, was to be seen in the houses. Spring-flowering bulbs were decidedly to the fore in the early part of April, with Chinese Primroses, Azaleas, and indeed anything that could be had in flower during the springtime; the propagating-house was in full swing, and bedding plants, growing on for sale, were numerous and in good condition.

Finding a growing demand for general nursery stock, which it was impossible he could produce at Ipswich, Mr. Notcutt became a few years ago the proprietor of a nursery at Woodbridge, formerly in the occupation of Mr. John Woods, the grounds occupying some 40 acres in extent. Here are cultivated large assortments of fruit-trees, Roses, Conifers, ornamental trees and shrubs; a specially being made of ornamental trees for avenues, streets, and park planting; American plants, forest trees, &c., and a large and comprehensive collection of hardy perennial and herbaceous plants. In addition, there is a growing seed business. Woodbridge is now Mr. Notcutt's headquarters; and should his health be spared him, there is promise of the

business becoming one of the largest in the Eastern Counties. Mr. Notcutt was recently selected by the Council of the Royal Horticultural Society as a member of its Floral Committee. *R. D.*

OAK-TREE NURSERIES, SOUTHGATE.

These nurseries are situated about 2 miles from the town of New Barnet, and within an easy distance of the town of Old Southgate. They are from 4 to 5 acres in extent, and occupy a sunny, open spot, there being nothing to obstruct the light or shade the buildings during any part of the day. The greater part of the ground is covered with glasshouses and pits, and the few spaces that remain uncovered by buildings are given up to the cultivation of the Pansy, Chrysanthemum, and Euonymus. The glass erections are of the usual type found in market establishments, they being mostly span-roofed, and of great length, and constructed on strictly utilitarian lines. The proprietor is Mr. Harry Ward, son of Mr. John Ward, of Leytonstone, who at one time was a most successful exhibitor of specimen plants, and well known to many readers of the *Gardeners' Chronicle*.

The first house visited contained a large number of Palms in two varieties, *Kentia Belmoreana* and *Cocco Weddelliana*; some very fine specimens of the latter in 32-sized pots were noted, which were well clothed with fronds, and in excellent condition generally. The *Kentias* were in rude health, and ranged in size from plants in 60's and 48's to those of 5 feet and upwards in 24's and 16's, ideal plants for furnishing purposes. In the same house was a big batch of *Dracæna congesta rubra*, and from the roof were suspended a large number of pots filled with *Ficus repens*, for which Mr. Ward informs me there is now a large demand for furnishing purposes, and for suspending in the windows of sitting rooms. They are certainly very ornamental as seen growing, with their long, trailing shoots drooping gracefully down all round, and almost entirely hiding the sides of the pots. In the next house was a grand lot of *Hydrangea Hortensia* in 24-sized pots, which were fine, dwarf, bushy specimens, some carrying as many as eighteen heads of bloom. The other occupants consisted of *Aralias*, and the shelves were filled with scarlet and white Intermediate Stocks just coming into flower, and filling the house with their fragrance. The scarlet variety is a fine type, selected by Mr. Ward some years ago, and which remains quite true. Thence we passed to a house filled entirely with white *Marguerites*, whose flowers were just opening, and needing but a few days of bright weather to render them ready for market. The plants are all dwarf, bushy specimens, full of flower-buds, and as near alike in height.

The great success attained here in *Marguerite* growing is attributed to propagating the plants in the autumn, and to pinching the plants after they are potted in 60's, as soon as they have made from three to five leaves. This early stopping of the shoots induces the plants to break back almost level with the soil in the pots, which results in fine, dwarf, bushy plants being secured. If struck in the spring, the plants are apt to become drawn and leggy, and are never so satisfactory. Then another large batch of *Hydrangeas* in 48's were seen, which gave promise of fine heads of bloom; also some hundreds of *Fuchsias* in the pink of condition. These comprised some four or five varieties, such as *Mrs. Marshall*, with white sepals and red corolla; *Lady Heytesbury*, with white sepals and pink corolla; *Ballet Girl*, having pink sepals and double white corolla; and *Scarcity*, a variety with dark-purple corolla. That too-little-grown *Saxifrage*, *S. pyramidalis*, was noted as being present in good numbers; it is said to be a first-rate market subject, as well as being indispensable for decorative purposes in private gardens. Next were seen large quantities of *Pelargoniums* of the Ivy-leaved section in three varieties—*Souvenir de C. Turner*, one named *Galilee*, and *Madame Crousse*. The plants of the latter were in a forward condition, the pips in the flower-trusses

in many instances just bursting, so that they will shortly be ready for disposal. These are said to be more profitable than *Marguerites*, as three plants of these *Pelargoniums* will stand in the space occupied by one *Marguerite*.

Several houses filled with *Marguerites*, both white and yellow, in various stages, were next seen; also a batch of *Solanum capsicastrum* in 60-sized pots, comprising some 5000 in number. The firm makes a specialty of this plant, and a houseful I saw last autumn was worth making a journey alone to see, so finely had they been grown.

In one house Mr. Ward drew my attention to a quantity of seedling plants of *Campanula isophylla* that he has raised from a plant which was a decided advance on the ordinary type, both in habit of growth, floriferousness, and the colour of the flowers. I well remember seeing this last season, and can vouch for it being a decided improvement on the old form of *C. isophylla*. The white variety is also largely grown.

Mignonette is represented by some thousands of plants in various stages of growth, both from plants just pegged down and breaking, to those almost ready for market. Great numbers of these are grown in pots suspended from the roof for room decoration. The variety grown is a selection from *Matchet*, and has been in the hands of the Ward family for the past twenty years; so that further comment is unnecessary.

A zonal *Pelargonium*, named *Constance*, and of similar colour to *Mrs. J. Robertson*, is represented by several thousand plants. It is a good-habited variety, and the colour of the flower being a pretty shade of pink, it sells, I understand, most readily. *Petunias* are grown in large quantities, and there are yet a vast number of seedlings to pot off. *Aralias* were seen in thousands from seedlings in small pots, to plants in 48's ready for their final shift. These will be the plants to begin the autumn season with, and the demand for them continues on through the winter, and until *Marguerites*, &c., are ready.

In a pit was a large quantity of plants of *Chrysanthemum segetum* in small pots, for summer flowering. The strain is a good one, it being dwarf and bushy, and very free flowering, and the plants meet with a ready sale. This is the result of nine years' careful selection. A large number of *Chrysanthemums* are grown, chiefly the so-called "market sorts," for autumn and winter sales, such as *Marie Massee*, *Ryecroft Glory*, *October Yellow*, *La Petite Marie*, *Pink Christine*, *Mrs. Wingfield*, *Phœbus*, *W. H. Lincoln*, *Mrs. J. Thomas*, and *A. J. Balfour*. These are planted out, and lifted and potted as soon as the plants have broken well. This method Mr. Ward considers to be preferable to growing them altogether in pots, and judging by the results achieved here, it may with advantage be adopted by private growers, where a large number of plants are required for decorative purposes only. *Poinsettias* and *Euphorbias* also come in for a considerable share of attention, the demand for the bracts at the Christmas season being a brisk one. *Pandanus Veitchii* is also grown in good numbers, and the pretty elegant looking *Selaginella Emiliana* is grown by the thousand, there being, it appears, not the slightest difficulty in selling any quantity of it. Such, in brief, are a few of the specialties cultivated by this firm; and in answer to an inquiry of mine as to the annual output in the way of plants, I elicited the following facts:—Of *Marguerites* the sales total over 10,000, the same of *Petunias*, 10,000 *Aralias*, 5000 *Solanums*, 6000 to 7000 *Fuchsias*, 4000 *Ivy-leaves*, &c. *A. W.*

TRADE NOTICE.

PINEFIELD NURSERIES, Elgin, lately occupied by Messrs. Morrison & Co., have been purchased by Mr. Wiseman, who will carry on the business thereof in connection with his other nursery and seed establishments in Elgin.

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

May 7.—*Present*: Dr. M. T. Masters, F.R.S., in the Chair; Messrs. Houston, Bowles, Hogg, Dr. Rendle, Messrs. Chapman, Douglas, Worsdell, O'Brien, Saunders, Groom, Holmes, Elwes, Michael, Rev. W. Wilks, Prof. Boulger, Prof. Church, Rev. C. Wolley-Dod, Dr. M. C. Cooke, Dr. Müller, Rev. G. Henslow (Hon. Sec.).

Beetroot tumour.—Dr. M. C. Cooke reported as follows upon the specimens sent to the last meeting:—"The tumour on the Beet is a somewhat globose nodule on the side of the root, about the size and form of a Tangerine Orange, attached to the root by a narrow neck, scarcely an inch in diameter. When the root was cut down the substance of the tumour did not seem to differ from that of the root; the pale zones on the side next the swelling passed into the tumour traversed it concentrically, with something of the appearance which a transverse section of the root would exhibit. At the periphery darker spots appeared, just below the surface, which were nearly black, and mostly with a small central cavity. The walls of this cavity and the blackened part generally were traversed by a delicate network of mycelium, but I could find no trace of spores, or conidia, or fruit of any kind in the cavities. I may add that externally the tumour showed no discoloration or other evidence of the concealed blackened spots. The reference which was on my mind when I first saw the root was a short note in *Massee's Plant Diseases* (p. 225), in which he calls it 'Beetroot tumour,' and says that it occurred in the grounds of the School of Agriculture, near Algiers, and before that time it was unknown. This must have been about seven years ago. It is thus described: 'Large nodules of brain-like outgrowths develop near the apex of the root, and may consist of modified leaves or rootlets; the tumours are fleshy, attached to the root by a short narrow neck, and in the substance are numerous cavities filled with dark-coloured spores. The spores are subglobose, produced at the apex of a hypha, which bears a large vesicular swelling just below the spore.' It can only be added that the name given to the fungus causing the tumour is that of *Oedomyces leproides*. Its relations are to a certain degree with the *Ustilagines*, or smuts, but require further investigation. It is impossible in the absence of fruit of any kind to affirm that the tumour under notice is the same as the Algerian specimens, although it seems probable. The production of spores may have been arrested by the climatic conditions, which are so different from what they would be in North Africa. The blackened spots and the plentiful mycelium would indicate the work of a fungus pest. An opportunity presenting itself, I submitted the affected Beetroot to Mr. Massee, and he was equally interested with myself in its examination, and together we consulted the authorities who had written on the subject, coming to the conclusion that it was very probable that our tumour was the same as the Algerian one, but only in its initial stage, assuming that it required a higher temperature for its full development. His microscopical examination confirmed my own, that there was a profuse mycelium present, and that doubtless the tumour was the result of fungal parasitism.

Galls on Schinus Molle.—"The other object alluded to, as exhibited, was the young twigs and green leaves of *Schinus Molle*. The leaves proved to be perfectly sound and healthy, but attached to the twigs we found five or six small discoid fleshy bodies, about 2 millimetres in diameter, attached, like a button, by a small central shank. These excrescences were whitish at the circumference, rosate, and rather corrugated towards the centre. In substance they were soft and fleshy, easily cut with a penknife, and apparently solid. Under the microscope the cell structure was found to be that of the host-plant, and there were no traces of mycelium. All the evidence seemed to indicate that these bodies were a kind of gall produced by the plant in consequence of some such irritation as that caused by the puncture of an insect. Unfortunately we could find no trace of egg, larva, or insect; but it is in that direction we believe further investigation should be directed, and the plant should be watched for further developments. In both instances, therefore, we were only partially successful, and shall at any time be glad to examine either in a more advanced stage, when doubtless we shall have to relegate the latter to the entomologist." A unanimous vote of thanks was accorded to Dr. Cooke for his interesting and valuable report.

Daffodils, monstrous.—Rev. W. Wilks showed a specimen of what ought to have been a large trumpet *Daffodil*, but the peduncle bore two flowers of nearly the ordinary size of the wild *Daffodil*, instead of a single and large blossom. There was no fasciation. It was interesting as a reversion to the

form and size of the Daffodil, in consequence of there being two flowers in place of one. Mr. W. LOGAN, of Hither Green, Lewisham, sent specimens which had the corolla split up into segments, and more or less crested. One-half of the trumpet was elongated, the other half abbreviated, possibly indicating a double parentage of *N. poeticus* with the Daffodil. In another case the leaf was sheathed, as occurs in Grasses; the flower had five perianth leaves, five stamens, and two carpels, due to a partial arrest of growth on one side of the flower.

Ferns, Crested.—Mr. DRURY corrected an error in the last report, in that the Ferns he described were often crested to the third or fourth degree, but not fasciated. Mr. HENSLAW observed that Mr. Drury was perfectly correct. The term "fasciation" was only applied by Linnaeus to stems; but as it is correlated with a continual branching of the fibro-vascular cords, Mr. Henslow classed it with several other phenomena of foliar organs, which are associated with a similar repeated chorisis of the cords, as, e.g., in crested sepals of the Rose, of the petals of Cyclamen, &c.; and Mr. Drury added the crested apices of Ferns, in none of which is there any necessary fasciation whatever. Dr. MASTERS criticised Mr. Henslow's statement, which laid stress on the development of the fibro-vascular cords, as the cellular growing points precede the formation of vessels. But this was a necessary feature, as the fibro-vascular cords could not exist unless they were clothed with parenchyma. As, however, their several branches ultimately entered the foliar organs of a multifold flower, he did not think the criticism had weight. In fact, the development of cellular tissue and cords goes on simultaneously, the former continually providing the material through which the cords may ramify, and often outstripping them, as in the margins of crested petals, into which the cords do not travel far enough to reach the actual margin itself.

Violets, self-fertilising.—Mr. W. J. JAMES, Woodside, Farnham Royal, Slough, sent some white Violets (*Viola odorata*) which produced capsules. As a rule the purple Violet sets no seed in this country, though it does in S. Europe. On examination it was found that the flowers became self-fertilising, because the beak-like extremity of the style with its stigmatic orifice was not only strongly curved upwards (because the flower is inverted), instead of being at right angles with the style, but was completely included within the connivent connectives. The connectives were all wrapped round the style, preventing the escape of the pollen, which is then caught by the spoon-like two lowermost connectives. The pollen falls directly on to the stigmatic orifice. The flower is thus perfectly adapted to secure self-fertilisation. The plants are also provided with the usual cleistogamous buds. In these there are five minute petals, five anthers all alike without tails, forming a star-like group upon the summit of the ovary. The stigma is short, truncated, and concealed beneath the anthers, the pollen of which enters the stigma without the anthers dehiscing by the tubes penetrating them along the lines of dehiscence in normal anthers. Mr. Henslow showed plants of the N. American species, *V. cucullata*, &c., with cleistogamous buds, apparently indicating the fact that these had become a specific character before a world-wide diffusion of the germs had taken place.

"Kent" Water unsuitable for Plants.—Mr. E. ROBERTS, F.R.H.S., Park Lodge, Eltham, writes as follows:—"Our water from the Kent Waterworks is not at all a fit food for our plants. I am in the habit of treating it thus. I first add 1 lb. caustic lime to 1000 gallons to neutralise the calcium carbonate, and then add 6 oz. amm. sulph., 6 oz. potassic nitrate, and 4 oz. amm. phosph. I shall be glad to know if this treatment can be improved upon, and if it is suitable for Orchids generally, including epiphytal." Prof. A. H. CHURCH, who undertook to examine the water, reports as follows:—"In reference to Mr. Roberts' letter, I should like to make a few remarks. I have looked up the older analyses of this water, because the official results do not now include determinations of sulphates and of calcium in its several salts. After adding the caustic lime (preferably after slaking, and in the form of cream), the whole bulk of treated water is (I presume) allowed to rest, that it may deposit the separated carbonate of lime. Then to the clear liquid the salts named should be added. I think the quantities named reasonable. Anyhow, the prepared water is a mild stimulant and general plant food. Owing to the partial removal of the lime salts, it ought not to spot the foliage with a white deposit. I should not like to say anything as to its peculiar suitability to Orchids, terrestrial or epiphytic, but I think its use cannot be injurious."

Odontoglossum crispum, peloric.—Mr. T. ROCHFORD sent a specimen in which the lateral petals were more or less crested and spotted like the lip.

Gloxinias.—Specimens with internal paracorolla and external linear crests were exhibited by Mr. HOUSTON.

Hymenocallis sulphurea.—Mr. WORSDELL showed this plant, being the same as one of Dean Herbert's hybrids.

Seedling Lilies growing underground.—Mr. WORSDELL referred to this subject, and added remarks upon the germination of certain monocotyledons without a cotyledon. Mr. ELWES said that he had observed how seeds of *Daphne Mezereum* and Lily-seeds remained a long while—even three years—and then germinated. *Cephalanthera rubra*, he observed, was said to have germinated after some seventy years. Rev. G. Wolley-Dod remarked, with reference to this subject:—"In my garden the seed of Lilies often germinated, and the bulbs grew for three or four years without any visible growth above ground. This statement has been very fairly questioned, and it was said that it could not be admitted as a fact of vegetable physiology without minute and particular details. I confess that I have never made careful and continuous observations in the matter, chiefly because I assumed that it was generally known and admitted. The particular Lily about which my impressions are very strong is *L. monadelphum*. This species thrives particularly well in the heavy, retentive soil of my garden. I have been in the habit at any time during the last twenty-five years of taking a handful of the seed of this when ripe and throwing it on the surface and raking it in where there were two or three square yards of untenanted soil. At first I used to suppose that the seed perished, as no growth appeared above ground; but on digging at the end of a year or two, bulbs were found from the size of a Pea to that of a Hazel-nut, but it was not till the third or fourth year that above-ground growth, nearly ready to flower, or perhaps with one flower-bud, appeared. The bulbs had not only increased in size, but had dived several inches beneath the surface. As it appears that this habit is doubted by competent botanists, it would be well to have it settled by some observer more likely to see the experiment through than I am, and I shall have much pleasure, next August, in distributing packets of seed to any amateurs who will make the trial, and at the end of four years announce the result of their observations." Some years ago the question came before the Scientific Committee as to the possibility of fully developed bulbs increasing in size below the soil without having any external stem or foliage. It was maintained by some growers that such was really the case.

Hybrid Carnations.—Mr. DOUGLAS exhibited flowers of Lady Buxton Carnation × Sweet William ♀; also the latter × Uria Pike (crimson) Carnation; also Duchess of Fife (rose) × Sweet Williams. They were very intermediate in character, with no scent, but having more of the Sweet William foliage, and with flowers showing a tendency to cluster (see fig. 115, p. 311).

Cattleya Lawrenceana, Ma'formed.—Mr. O'BRIEN showed a flower devoid of a labellum, also *C. Mendeli*, which often comes deformed, and more or less constantly so in plants from certain areas. Mr. DOUGLAS observed that he had a plant with fifteen flowers, dimerous, or lipless, &c.

Crinum sp.—Mr. ELWES exhibited plants of *Crinum* which flowered after fifteen years. They came from near Lake Nyassa, and there was a doubt as to their specific differences from *C. capense*, as there was great variability among plants from seeds. *C. crassifolium* (according to Dutch growers) appeared to be the same as *C. petiolatum* from the Niger, remarkable for its globular bulb, and by continuously flowering.

Plants from Cambridge Botanic Gardens.—Mr. LYNCH exhibited the following interesting plants:—*Dimorphotheca fruticosa*, only lately introduced to Cambridge from S. Africa; *Lathraea claudestina*, with large purple flowers, which Mr. Lynch has succeeded in establishing on the roots of Willows, as well as our native *L. squamaria* on Poplars; *Hippeastrum aulicum*, one of the species of the original hybrids of the modern so-called *Amaryllis*, remarkable for the great obliquity of the perianth leaves; *Cheiranthus mutabilis*, the true plant, and not the same as that usually grown under this name; it is not quite hardy. Prof. CHURCH remarked that specimens grown at Kew show a larger range of colours than those of the Cambridge plants, and that the peculiar nature of the colouring matters is due to changes in the neutrality, alkalinity, or acidity of the sap. *Acer carpinifolia*.—This is one of the several Japanese species, having leaves without lobes, the blade closely resembling that of the Hornbeam. *Helwingia japonica*.—The foliage is remarkable for having the peduncles adherent to the petiole (as is that of the Lime to the bract), so that they are apparently borne by the leaf, and resemble superficially *Ruscus aculeatus*. *Citrus trifoliata*, a very spinescent species, requires only a very slight protection. Dr. Masters observed that it was used in Florida as a stock for Oranges, so that they could withstand frost. *Hymenanthera crassifolia*, a shrub both in flower and fruit, of the family Violaceae. It is a native of New Zealand. *Hibbertia scandens*, perhaps the largest flowering species, somewhat resembling *Hypericum calycinum*, while *H. Readi* bore the smallest flowers; probably natives of Australia. *Stigma-phyllon ciliatum*, a handsome, yellow flowered Malpighiad.

Macleania insignis, of the order Vacciniaceae, a very uncommon plant, figured from the Cambridge plant in *Bot. Mon.* t. 764 (1900). An unanimous vote of thanks was accorded to Mr. Lynch for the above exhibition.

LEEDS PAXTON.

MAY 4.—At a meeting held on the above date, Mr. W. MOORE, Allerton Hall Gardens, Gledhow, Leeds, read a paper upon "Chrysanthemums for Exhibition."

Mr. MOORE described the methods of culture that he found to succeed best in the neighbourhood of Leeds, and disagreed with the southern growers in "taking" second buds of many varieties recommended. A very good method to grow dwarf plants was to strike cuttings in March, pinch late varieties about the second week in May, and earlier varieties in the beginning of June. Cultivate the plants in 6-inch pots, and let each produce one bloom only. It was very essential in Chrysanthemum cultivation to exercise care when potting the plants for the last time, that perfect drainage be supplied, and that not too great a proportion of manure be mixed with the compost, or supplied as liquid afterwards.

CROYDON HORTICULTURAL MUTUAL IMPROVEMENT.

MAY 7.—A paper on "Gardener's Feathered Friends and Foes" was given by Mr. Percy Bunyard at a meeting of this debating Society, held at the Art Gallery on the above date. Mr. Bunyard said the amount of harm done by birds in the garden was infinitesimal as compared with the large amount of good which they did. A garden without birds would be like a garden without its Rose, and a bird was as beautiful as the most beautiful flowers. If birds were given more encouragement, and were not slain so ruthlessly, he thought the number of species in London gardens would considerably increase. There were many ways of attracting birds to the garden, as well as of getting rid of them. The best way to encourage them was to give them plenty of food of the kind they preferred. He did not advocate shooting, trapping, and poisoning, as a means of keeping birds from the garden. One of the best things for keeping birds away was an old policeman's rattle. The thrush, blackbird, and starling, undoubtedly wrought great havoc with the fruit, but this might easily be prevented by a plentiful supply of netting, and also by the imitation of a hawk suspended over the trees. Mr. Bunyard described those insect-eating birds which are of most value in a garden, and said that the bullfinch was the least entitled to be considered a "friend." The lecture was illustrated by lantern-slides by the noted bird-photographer, Mr. R. B. Lodge, Enfield.

READING GARDENERS' ASSOCIATION.

MAY 14.—The members of this body, numbering over ninety, went on Tuesday last by rail from Reading and other stations down the Newbury line of the Great Western Railway to Midgham station, and thence walked up through a beautiful country road to Bucklebury Place, the residence of Mr. Arthur W. Sutton, V.M.H., for the purpose of seeing the charming gardens, and enjoying their host's generous hospitality. After partaking of a bounteous tea, served in the large Club-room on the estate, the party walked over the grounds and enjoyed to the fullest the beautiful views which offer from the elevated plateau on which the residence stands. A feature of exceeding interest and beauty is the lake garden, formed conjointly with Mr. Sutton by that gentleman's able gardener, Mr. Alexander Wright, from out of a boggy wood and dell. This spot was at the time of the visit exceptionally charming with Bluebells, Tulips, Narcissi, Japanese Acers, and other pretty plants. Sitting on the sloping lawn, Mr. A. Wright took photographs of the large party, now increased to one hundred, and then, by special request, gave a short address on the Wallflower. This was a peculiarly fitting theme, for just then some 6,000 plants in several distinct colours were in luxuriant bloom on the upper lawn, and proved one of the most delightful examples of floral decoration by Wallflowers to be seen in any garden.

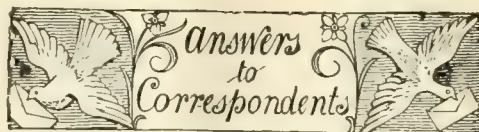
UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

The monthly Committee Meeting of this Society was held at the Caledonian Hotel, Adelphi Terrace, Strand, on Monday evening last. Messrs. POLLETT's tender for printing agenda forms was accepted. Ten new members were elected, and three others nominated. The Secretary reported the death of Mr. M. ABLE DAVIS, and it was resolved that the amount standing to his credit in the books of the Society, viz., £55 0s. 8d., be paid to Mrs. DAVIS, and that a vote of condolence be also sent her. The sum of 7s. per week from the Benevolent Fund was granted to Mr. H. SAUNDERS (No. 11), until his case demands further consideration. Mr. G. CHENEY was granted 10s. per week for three weeks from the Convalescent Fund, for a change of air, in addition to his sick pay. It was resolved that 100 copies of the rules be estimated for, and submitted to the Committee at the next meeting.

VARIORUM.

RAFIA FIBRE IN MADAGASCAR.—*RAFIA*, or as it is generally spelt, "rafia," is the Malagasy name of a Palm which furnishes a staple article of commerce, called rafia fibre. It is indigenous to Madagascar, and it is to be met with everywhere on the coasts, needing neither cultivation nor attention of any kind. It is not a stately Palm, but sends its enormous branches from near the ground; in a fine specimen one branch is almost a tree in itself. The rib in each branch is as much as 20 feet long, of a pearly grey colour, smooth and shiny, flat on the inner surface, but otherwise round, without any knobs, and so exceedingly hard. At the base it is as large as an ordinary champagne-bottle, and tapers to a point at the top. The inside consists of a light pith, which can be split into layers of any thickness. Possibly, says the United States Consul at Tamatave, it is this, or an analogous production, which is used for making pith helmets in the East. Naturally these ribs combine great strength with wonderful lightness, and are used for shafts for "filanjanas" or palanquins, ladders, or other purposes, but otherwise have no particular commercial value. It is the pinnate leaves which produce the rafia fibre of commerce. One Palm frond will produce eighty or one hundred long green leaflets, from 2 to 5 feet in length, like the leaves of the Sugar-cane, but of a dark, lustrous green, and both thicker and stiffer. These again, contain a round and plant rib, which the natives utilise for making baskets and dredges for catching small fish and shrimps in the rivers after they have stripped off the green part which furnishes the fibre. The under part of this green leaf (which is not exposed to the light, as it remains folded), is of a pale greenish-yellow colour, and from that side the inner skin can be peeled off in the same manner as the skin on the outside of a Pea-pod, except that it peels off straight to the tip without breaking. It is then of the palest green, and after being dried in the sun assumes a light straw colour. This is the rafia fibre of commerce. It was originally sought for by the natives for use in articles of clothing. The men bring in the fronds, and women and girls weave it on hand-looms, of any coarseness or fineness. Woven just as it is peeled off from the fronds, it forms a kind of sacking used for wrapping goods, while the perfection of the art, as known by the Hovas only, is to weave a tissue of which the warp is rafia fibre split very fine, and the wof of white silk. This gives an article called silk lamba, which fetches fancy prices in Europe and America. The coast tribes use it for clothing, but of moderate fineness, with dyed stripes of indigo, saffron, black, and a dirty green. It is a cold, comfortless looking material, and refuses to adapt itself to any folds that a sculptor would care to copy. Rafia fibre is used in Madagascar by nurserymen, gardeners, &c., for tying up Vines and flowers, and possibly for grafting. It possesses the advantage of being as soft as silk, and is not affected by moisture or change of temperature so as to risk cutting or wounding the most delicate tendrils, and it does not break or ravel when folded or knotted. These qualities bring it into use all over Europe, and consequently maintain its price. It is virtually inexhaustible in Madagascar, the supply being limited only by the scarcity of labour. For export the fibre is merely collected in large skeins, twisted up or plaited, and then baled like raw cotton. Madagascar exports about 20,000 bales annually. *Journal of the Society of Arts.*

ANTHURIUM ANDREANUM VAR. ED. PYNAERT.—The current number of the *Revue de l'Horticulture Belge* has a good coloured illustration of a noble variety of *A. Andreanum*, with an ivory-white spathe and spadix of large size. It was raised by M. EDWARD WARTEL, of the Société Horticole Gantoise, and is worthy to bear the name of the much-lamented Pynaert.



BANANAS: Nemo. If growing in a hot-house, the fruits, as they ripen gradually from the base to the tip, may be taken off either when fully ripe, or a few days in advance of perfect ripeness.

BOOKS: *C. Bond, Messrs. J. Veitch & Sons' fascicle of Orchidaceous Plants, treating of Odontoglossums; Tableau Synoptique de la Culture des Odontoglossum, par H. J. Goemans, Gand, printed by C. Annoot-Braeckman, Ad Hoste successeur; Les Odontoglossum, with sixty-five figures by L. Duval, Paris (Octave Doin, et Librairie Agricole). We are unable to give prices.*

CELOSIA PYRAMIDALIS (PLUMOSA): S. S. In the early stages the plant needs as much warmth as its near ally, the Cockscomb; but after the plant gains strength and approaches the flowering age, the warmth of the intermediate-house, 50° to 65° suffices. The seed is usually sown thinly in pans, which are placed on a hotbed in which cuttings of stove plants are struck and Melon-plants raised. The seedlings are, soon after germination, pricked off singly into pots filled with sandy peat and leaf-mould, and grown on still in a hotbed near the glass with air afforded in fine weather. At the next potting, which must be performed when the roots have filled the pots, rather less bottom heat may be afforded after fresh roots are made; and when the plants are 2 feet high, and the inflorescence is developing, the intermediate-house, or better still, a pit in which the temperature given above is afforded, will be suitable for them till they are removed to the conservatory. The plant late in the year needs more warmth than is afforded by a greenhouse. Any stinting of pot-room in the early stages will throw the plant into bloom, so that liberal shifts are advisable where plants of large size are desired.

CUBIC CONTENTS OF GLASSHOUSES: Alpha. First take the width of the house (if a half-span) from the top of the wall-plate to the back wall, multiplying the width into the height, which will give the area of the cross section, and this multiplied by the length of the house in feet will give the cubic contents; then measure the angular space above the wall plate by multiplying half the perpendicular by the width at base, and the result by the length of the house. Add the two measurements together, and you will have the cubic contents of the house. The cubic contents of a span-roofed house are similarly obtained, namely, total width of angular part of roof, multiplied by half the height of the perpendicular line taken from the apex of the roof, to the base line drawn from the wall-plates on each side.

CYANUS: Reseder. The brown spots are the heaps of spores of *Puccinia Hieracii* (Mart.). Affected plants should be removed and burned, otherwise the rust will spread.

FLOWERING OF CALADIUMS: A. C. This is not unusual.

GRAPES DISFIGURED: P. M. The black spots on the fruits are dead mildew, which has succumbed to some application, probably sulphur in some form. Remove all such berries, and syringe the Vines, &c., with water, in which sulphide of potassium at the rate of half ounce to one gallon of water is dissolved. The syringing with this mixture may be required more than once. Finally wash the Vines with clear rain-water.

IRON V. WOOD SASHES: Iron. For durability, iron is preferable to wood if well protected with paint, or by being well galvanised. An undesirable property of an iron roof is the greater heat of the house in the summer, and of cold in the winter; but this is so small a matter it is scarcely, in our opinion, worth consideration.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—*T. S.* Prunus triloba variety.—*H. P.*, Bishop's Stortford. Magnolia Soulangiana var. Lenne.—*Cutbush.* Gilia coronopifolia, Pers. (*Ipomopsis elegans*).—*J. F. J.*, Bromley. 1, Polypodium tenuicaule; 2, Davallia Mariesii; 3, Adiantum hispidulum;

4, Cheilanthes hirta; 5, Lastrea filix-mas; 6, Cyrtomium Caryotideum.—*G.* The grey-leaved plant is *Pyrus salicifolia*. The other looks like a species of *Actinidia*.—*T. H. W.* Leptospermum scoparium.—*W. D.* Amelanchier canadensis.—*C. B.* 1, *Tilia americana*; 2, *Amelanchier canadensis*.—*Orchid.* *Coronilla emerus*—shrub; *Maxillaria tenuifolia*.—*H. F.* 1, *Amelanchier canadensis*; 2, *Prunus Padus*; 3, *Berberis Darwinii*; 4, *Valeriana Phu aurea*; 5, *Pulmonaria officinalis*; 6, *Trollius europæus*.—*A. F.* 1, *Dendrobium Parishii*; 2, *Dendrobium crystallinum*; 3, *Dendrobium Boxalli*; 4, *Dendrobium devonianum*.—*C. S.* *Amelanchier canadensis*. Graft in the same manner as the parent plant.—*R. W.* 1, *Aëranthes arachnites*, allied to *Angreum*—a very rare species; 2, *Odontoglossum luteo-purpureum* sceptum; 3, *Odontoglossum luteo-purpureum*; 4, a narrow-petalled *Odontoglossum Wilckeanum*; 5, *Masdevallia Lindenii*; 6, *Masdevallia triangularis*.—*P. B.* *Tritonia crocata*.—*R. E.*, Bristol. *Cattleya Schilleriana*.—*A. G. L.* 1, *Hottonia palustris*; 2, *Alisma plantago*; 3, *Ranunculus aquatilis*; 4, *Cardamine pratensis*; 5, *Populus alba*, female flowers.—*E. G. S.* 1, *Codiaeum (Croton) Evansianum*; 2, *C. interruptum*; 3, *C. undulatum*; 4, *C. chrysophyllum*; 5, *C. trilobum*; 6, send in flower.—*H. G.* A Leguminous plant, that is all we can tell you. Send better specimen. The buds fall probably from too much or from too little water.—*J. E. B.* *Diplacus glutinosus*.

PEACH LEAVES: Work-op. We find no fungus, but believe the perforations to be due to insect puncture.

PINK CHESTNUT: T. A. C. We are unable, in the absence of fuller information, to suggest any other reason for your tree not flowering this year than that it flowered so copiously last year.

PIÑUS INSIGNIS: J. L. S. Judging from the miserable specimen received, the chrysalis appears to be that of one of the Pine-shoot moths (*Retinia*), but which we cannot determine.

RED SPIDER ON VINES GROWING IN A FLUE-HEATED VINERY: Alpha. Richard's XL-All is quite safe if carefully used, and if the vaporising be repeated at intervals of fourteen days it will keep the insects in check, if it do not extirpate them. Flowers of sulphur mixed as a thickish paste, and placed in saucers about the vinery, will do good, as would regular syringing of the leaves night and morning, avoiding undoing the bunches as much as possible. Let the flies another season be dressed with lime-wash, into a bucketful of which a handful of flowers-of-sulphur have been intimately mixed.

RHODOENDRON FRAGRANTISSIMUM NOT OPENING ITS FLOWER BUDS: L. Bury. As you do not mention your method of cultivation, we can but form a surmise of the cause of the buds refusing to open, viz., excess of vigour induced by too much pot-room. This and other species of *Rhododendrons*, and plants generally with fine, hair-like roots, should be starved into flowering.

STRAWBERRY: Fungoid. The injury has been caused by the punctures of some insects.

VINE LEAVES: Grape-grower. The leaves are attacked by a parasitic fungus—*Cladosporium viticolum*. Pick off and burn the affected leaves. Next season spray the Vines with potassium sulphide when the leaves are expanding.

COMMUNICATIONS RECEIVED:—*P. W. D.* & *D. D.* & *W. J. Fraser*.—*K. S.*—*B. Klog*.—*W. Logan*.—*T. F. P.*—*W. W.*—*A. Whitelaw*.—*F. J. O'B.*—*G. H.*—*F. T. M.*—*G. W.*—*W. G.*—*B. J. Baxter*.—*P. H. G. P.*—*W. H. P.*—*W. M.*—*A. W.*—*R. D.*—*H. M.*—Very anxious, Kerry—*S. P.*

PHOTOGRAPHS, SPECIMENS, ETC., RECEIVED WITH THANKS.—*D. B.* and *M. W. R.*, *Dendrobium densiflorum* and *D. thysiflorum* have been so frequently figured, that it is undesirable to repeat them.

Continued Increase in the Circulation of the "GARDENERS' CHRONICLE."

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

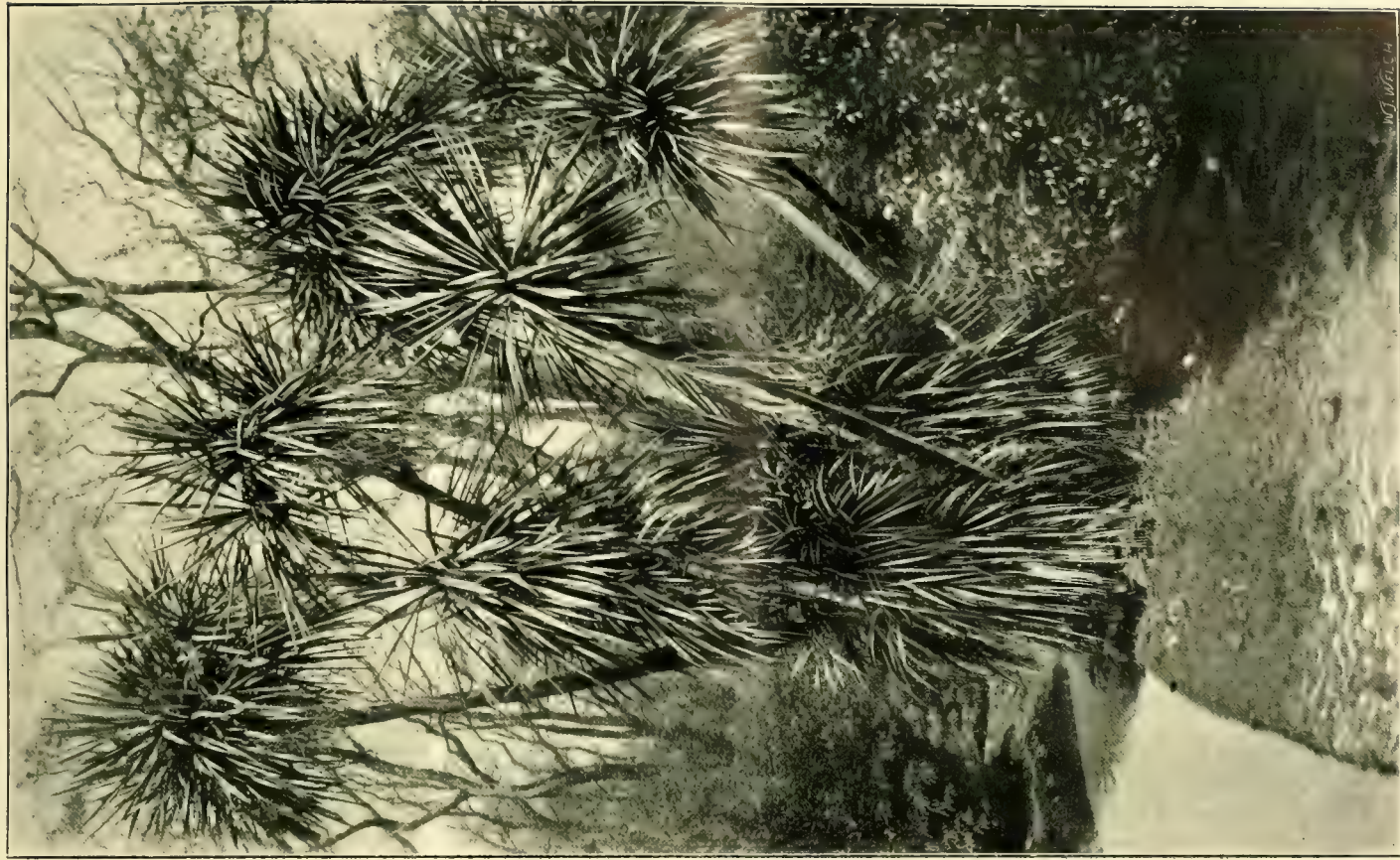
TREBLED.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, AND ALL CLASSES OF GARDENERS AND GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is preferred for reference in all the principal Libraries.

(For Markets and Weather, see p. x.)



CHAMAEROPS EXCELSA AND DRACENA IN THE GARDENS AT
PENJERRICK, CORNWALL.
PHOTOGRAPHED BY S. WYNDHAM FITZHERBERT, ESQ.



AN OLD SPECIMEN OF DRACENA AUSTRALIS IN THE GARDENS AT
PENJERRICK, CORNWALL.
PHOTOGRAPHED BY S. WYNDHAM FITZHERBERT, ESQ.



THE

Gardeners' Chronicle

No. 752.—SATURDAY, MAY 25, 1901.

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THE FORTHCOMING ROSE SEASON.

IN the wars of the Middle Ages the soldiers used to fight very furiously during the summer months, but when winter began to tell its tale, and the Apennines and the Alps betook them to their winter covering of snow, they withdrew into their winter quarters, and endeavoured by hard drinking and gambling to comfort themselves for the hardships they had undergone during the past months, and when the spring revived they would be busy repolishing their armour, repairing all damages, and in exulting song and such like amusements prepare for the campaign which was to follow. They would tell of all their victories, real or assumed, and assure their listeners that they were as nothing compared with those which were to follow. They would probably extol the deeds of some young and noble knight who had but lately joined them, but who they confidently expected to conduct them to victory, and, like another Don John of Austria, lead them on to the complete subjugation of their foes. In some such way rosarians regard the month of May. They have brought out their boxes in which were marshalled the Roses, with which they won or lost last year; they have prepared their

tubes (Foster's, of course); they have given the boxes a fresh touch of paint, and on the whole they feel that they, at the least, are prepared for the coming conflict. They are visiting perhaps one another's Rose garden, they are examining the conditions of their growth, and enquiring what other growers think of their prospects; but unlike those warriors of whom I have written, all this is done in goodwill. For I must say, after long experience, that I think rosarians of all degrees are "jolly good fellows." "Envy, hatred, malice, and all uncharitableness," do not I think enter into their composition, save in very few instances, and they are as ready to congratulate a successful rival as much as if, the cases being reversed, they themselves were the victors.

We have arrived at that month which as a rule practically determines the character of the Rose season; of course, other things may interfere afterwards, but as a rule, I think the aspect of the plants in this month is tolerably decisive of their future condition. When we talk of the forthcoming Rose season, I imagine our thoughts are mostly centred on what are termed exhibition Roses, and the doings of the various societies which have been founded to encourage their growth, and more especially those of the great national society which has done so much to make the queen of flowers popular.

For the first time in its existence the national society has the patronage of the Queen; for many years she was patroness as the Princess of Wales. The Hon. and Rev. J. T. Boscawen secured that honour for us. She never visited the show so as to see what it really was; many years ago she had engaged to do so at the Crystal Palace, but that very unpleasant person, the Shah of Persia, upset all our plans. We were excluded from the Palace, and put into a stuffy tent; and as his Majesty could not come there until six o'clock in the evening, neither he nor the Princess saw the flowers while they were worth looking at.

The committee has done everything in its power to ensure success; they have even insured themselves against the misfortune of a wet day. It was a revelation to me that this could be done, and when I made an observation about it, expressing my surprise, the reply was, "Oh, anything can be insured now-a-days." The exhibition will, by the kind consent of the Benchers of the Inner Temple, be held in their beautiful gardens on the Thames Embankment, in one large tent, 500 feet long, and it will be a great advantage to get away from the commercial aspect of the Crystal Palace Company, and also to take up a thoroughly independent position. The committee has also done wisely in doing as much as possible for the decorative side of the exhibition. There will, we hope, be a large number of visitors who, although they are not particularly interested in the points of an exhibition flower, are yet keenly sensible of the bowl or vase of flowers, and the many ways in which the Rose can be used for decorations. To all of these purposes the exertions of the committee will be directed, and the complaint which has been sometimes made that the Society only concerns itself about "fat blooms" will no longer have any force. Although we may have some sort of idea of what the character of the bloom is likely to be, as everything depends on the character of the weather during the next few weeks, it will not be well to do more than give a rough estimate of it. It will, I think, according to present appearances, be a late season, although we have not had any great

amount of frost or snow, except in some few places we had some very cold unsatisfactory weather, both in March and April, and judging, not merely from my own garden, but also from what I have heard from others, the blooms must necessarily be late. I do not think this is a very great loss. One of the most trying times for the Rose bloom is the last week in May, when we are often subjected to cold winds and frosts, and I think if the Rose is not very much advanced, the plants will come out of that trying time with greater safety, and therefore I do not think that a late season is much to be deplored. More especially is this the case with regard to Teas: many of these suffered during the last winter, some being hard hit and others quite killed, and although we are getting a hardier race of Teas, yet there are still many which are likely to be injured by cold and damp. From many quarters I hear that the wood was in capital condition at the time of pruning, some growers averring that they never had such strong, firm wood. I imagine the same cause which will, perhaps, militate against the H.P.'s and Teas will be in favour of the garden Roses. Many of these in the southern parts of the kingdom have been pretty well over before the metropolitan show takes place; but this year they will have a double chance, for the show is two days earlier than that which was announced before the right to move to the Temple Gardens was secured, and anyone who knows what garden Roses are, knows that two days are of very great advantage. Of course, as Rose-growers are always on the search for novelties, new varieties will be looked forward to with the keenest interest. There is the usual crop from abroad of some sixty or seventy varieties, but we have gained so little of late years from that source that we do not raise our expectations very high. The following are said to be likely to be valuable acquisitions:—

Madame Ernest Levavasseur, H. P. (Vigneron), is a bright vermilion-red, shaded fiery carmine; large globular flowers, very strong grower; said to be superior to Ulrich Brunner.

Apotheker George Hofer, H. T. (N. Welter).—Brilliant, bright, large, and full, long buds, very strong grower, brightest of all the red Hybrid Teas.

Frau Karl Druschki, H. T. (P. Lambert).—Pure snow white, very long buds, shell-shaped petals, large flowers, continuous and free flowering; very strong grower.

La Tosca, H. T. (Vve. Schwartz).—Soft pink, tinted with rosy-white and yellow, large and full.

Comtesse Oliver de Langeril, T. (A. Bernaix).—Rose shaded Peach-yellow at the base; large and beautifully formed flowers.

Madame Antony Choquens, T. (A. Bernaix).—Amaranth red, reverse of petals pink, opening to Currant-red and clear pink, remarkable for the contrast of colours.

Madame Ernest Perrin, T. (Veuve Schwartz).—Deep Apricot colour, shaded yellow and creamy pink, very large.

Mrs. Reynolds Hole, T. (Nabonnand).—Colour rose to dark scarlet; single flowers on long stems, very strong grower, and free flowerer, with handsome foliage. Highly recommended.

Noella Nabonnand, climbing H. T. (Nabonnand).—Velvety crimson; enormous, fine-shaped flowers; large and handsome foliage, a colour much required in climbers.

When we come to home-raised Roses we are on safer ground, many of them having already been seen.

Mrs. B. R. Cant is one which for its very name is sure to be valued, and it has no doubt great merit. It was exhibited at the Drill Hall of

the Royal Horticultural Society on September 25, 1900, and received the unanimous Award of Merit. The flower exhibits a remarkable combination of colour, being deep rose on the outer petals, even in some instances quite a rich red, while the inner petals are soft silvery-rose, suffused with buff at the base; it has very handsome dark foliage, which adds very much to its beauty.

From the Newtownards firm we have to look for four new Roses, of which the raisers entertain a very high opinion:—

Duchess of Portland, H. T.—Awarded the Gold Medal of the National Rose Society, July, 1900; it is a Rose of great beauty, pale sulphur-yellow in colour, with an occasional green tinge, large and full.

Lady Moyra Beauclerc, H. T.—Colour madder-rose, with silvery reflex; a thoroughly distinct and splendid Rose.

Mildred Grant, H. T.—Another Gold Medal Rose, of which the raisers seem to have entertained most exalted opinions. Colour ivory-white, with an occasional flush of pale peach; the blooms are large, well formed, with high-pointed centre.

Marnie, H. T.—This was exhibited under the name of Mrs. Conway Jones, and has been seen at many places. The blooms are very large, the colour carmine-rose, slightly yellow at the base, beautiful and free-flowering.

Messrs. William Paul & Son bring to our notice their three new decorative Roses:—

Alexandra, T.—Pale buff, with orange yellow, centre shaded with apricot and bronze, a very attractive Rose, named by His Majesty the King in honour of Queen Alexandra.

Corallina, T.—Deep rosy crimson, with large petals; a strong-growing variety.

Sulphurea, T.—Flowers bright sulphur yellow, distinct and striking.

Messrs. Paul & Son also announce three decorative Roses of the Rambler type, all seedlings from Turner's Crimson Rambler^x, with *Tea Beauté Inconstante*: *The Lion*, *Purple East*, and *Wall-flower*; while *Una* is quite a new break, being a single Rose of great beauty, it is the Dog Rose crossed with the Dijon Tea, the buds are well formed, of a clear buff colour, while the standard flowers are almost white, and of great purity of form and colour.

It will thus be seen that there is something for all lovers of the Rose to look forward to, and that while exhibition flowers are not neglected, many decorative varieties will claim our attention. *Wild Rose*.

NEW OR NOTEWORTHY PLANTS.

TULIPA ARMENA.

THIS is a sturdy, dwarf-growing species, with the leaves of *T. Gesneriana*, and massive crimson flowers, which measure 5 to 6 inches across when fully developed. The flower-bud is very distinct, in being of a rich olive-green tint, the crimson of the inside of the flower showing through at the margins. As the flower expands this green colour gives place to crimson, but it is not until the flower has been open for several days that it entirely disappears. The petals are ovate-lanceolate in shape, very tough in texture, and are so flat that they give the flower a triangular appearance when closed. The colour of the type-plant is crimson throughout, save for a dull black eye; other forms are of a paler or richer colour, some have blue eyes, others grey, in others again a narrow white band surrounds the eye. The outside basal colouring of the petals is equally variable in different specimens, it may be white, yellow, green, or crimson; furthermore, a few specimens have crimson-coloured ovaries as well. It is a very distinct Tulip of a showy character, and, though it is not quite so glowing in colour as

T. Gesneriana, it is likely to prove a useful plant, even under adverse conditions. The olive-green bud is a very distinct feature.

TULIPA MAURIANA.

Another new Tulipa, closely resembling *T. Gesneriana* in all its parts. The flower is cone-shaped when closed, coloured greyish-crimson on the outside, and intense crimson on the inside; the base of the flower is of a bright yellow colour on the inside, and a duller tint of the same colour on the outside. The flower measures 1½ to 2 inches in length, and does not expand to full extent even under the influence of bright sunshine. It is a showy species, and distinct from others flowering at the same time in its bright yellow eye; whilst the crimson compares favourably with the glowing tint of *T. Gesneriana*.

IRIS FLAVISSIMA.

A very bright-flowered Iris, of small growth, possessing roots and leaves like those of an *Onocycclus* Iris, and a flower most resembling *Iris xiphium* in shape. The leaves are sparsely produced, and rarely exceed 4 inches in length. The flowers, borne in pairs, are of a rich lemon-yellow tint, and measure 1½ in. across, and attain a height of 6 inches. The falls are furnished with a wide, median, hairy ridge of an orange-yellow tint; the blades very long and broad, as in *I. juncea*; the standards spatulate, erect, half the size of the falls; and the style branches are relatively small. The basal half of each segment is chequered purple, green, and brown, resembling *Iris Bakeriana* in this respect; thus one each of the characteristics of three distinct tribes of *Iris* are embodied in this little plant. Every tiny bit of the plant seems capable of flowering, and the flowers have a fragrance resembling that of Vanilla.

The plants mentioned above are natives of Asia Minor, and the regions in which *Iris flavissima* is found extend considerably northwards. The plants have flowered recently in the nurseries of Messrs. Wallace & Co., Colchester. *Geo. B. Mallett*.

FOREIGN CORRESPONDENCE.

EXISTENCE OF LILIUM AURATUM IN JAPAN AS A SPECIES.

IN an article regarding "*Lilium kewense*," published in the *Gardeners' Chronicle*, February 16, 1901, I read as follows:—

"The suggestion has been made by Lily experts that *Lilium auratum* is of hybrid origin, *Lilium speciosum* being one of its parents. It is difficult to believe that *Lilium auratum* was in Japan in Thunberg's time, when *Lilium longiflorum*, *Lilium speciosum*, *Lilium tigrinum*, and *Lilium Brownii* (*japonicum*) were known. How collectors in Japan a century ago can have overlooked such a plant as *Lilium auratum*, with its big flowers and penetrating odour, is not easily explained, unless we may assume that it did not then exist, and that it has been evolved since, either by Nature or man."

In reply to this, I beg to offer the following remarks:—

There seems to be no doubt that *Lilium auratum* is not a hybrid, but an original species, for it is found in a wild state all over the mountains of Central Nippon,* whereas *speciosum*, *longiflorum*, *tigrinum*, and *Brownii* are cultivated, and are never found growing wild in the mountains of Japan. The Japanese name for *Lilium auratum*, "*Yama Yuri*," the Mountain Lily, seems also a further proof that it is an original variety. The reason that *L. auratum* was not introduced into Europe before 1860 was simply that it was not until that date that Japan at large was opened to foreigners. Up to 1859, foreigners were allowed to live only on the small island of Desima, in Nagasaki Bay, a district where *L. auratum* does not grow. Nevertheless, on the authority of Mr. Henry John

Elwes, in his *Monograph of the Genus Lilium*, we have it that as far back as 1829, Van Siebold shipped some of these bulbs to the Botanical Garden at Ghent; but as these bulbs were probably brought to him from Central Nippon by a Japanese friend, and as the voyage from Central Nippon to Nagasaki took a very long time in those bygone days, and as there were no steamers in existence to carry these bulbs quickly through the tropics, naturally none of them arrived alive.

All these conditions were, of course, changed by the treaties of 1859, and interested foreigners at once saw the beauty of this Lily, and, to quote Mr. Elwes again, in 1861 it was introduced by four different persons, three shipping to Europe, one to America. Since then the export of these bulbs has increased yearly, but if this export continues to the same extent for ten years or so, and no better means of propagating and cultivating this lovely Lily are employed by those who cultivate the bulb for export trade, I am afraid there will be no more *L. auratum* to be had in Japan. Only a few days ago the writer addressed a communication to the Japanese Minister of Agriculture in Tokyo, drawing his attention to this fact, and it is to be hoped that the necessary means will be taken, or Japan will lose an industry which, under proper care, might have a great future. *Alfred Unger, proprietor, L. Boehmer & Co., Yokohama, Japan*.

CONVALLARIA MAJALIS PROLIFICANS.

Mr. J. Vrengdenhill, of Haarlem, lately exhibited at a show in Holland, some flowers of the new, improved *Convallaria majalis prolifans*. This variety has broad leaves and large flowers—some flowers have a diameter of nearly 1½ inch; they were from two-year-old crowns, and would have been larger if the plants had not been too dry last year (owing to the dry weather). Mr. Vrengdenhill remarked that the flowers were much damaged through heavy rain and hail, and he expected next year, when the plants will be three years old, to have much larger flowers. Nevertheless, this kind is flowering already very well indeed, and there are now plants with spikes of flowers with between sixty and seventy flowers, while some give two flower-stems; one flower-stalk was just like a Vine-bunch, in regard to the manner in which the flowers were attached to it. This variety promises well, and probably will, by good cultivation, produce flower-stalks with two flowers. The flowers were most interesting, and not only were the bells numerous, but they were very large too. The milk-white flowers have a pleasant fragrance. The flower-stalks on a great number of these flower-bunches were very broad, and different from the common one. Mr. Vrengdenhill would be pleased to show this new kind to anybody who wishes to see it. The plants are growing close to Haarlem. *X*.

CAMBRIDGE BOTANIC GARDEN.

DARWIN TULIPS.—A very fine set is now flowering in the Cambridge Botanic Garden. They are in a line at the foot of a low wall facing east, and this position, though possible of improvement, appears to suit them well. Different views have been held with regard to their nature, but, whatever this may be, it cannot be denied that they are exceedingly ornamental in the mass, and very beautiful individually if examined in detail. To many I find they are far more satisfying, in consequence of their self colours, than are the florists' Tulips. If improvement is possible, it would perhaps be attained by reducing the height of the stem; but this, indeed, appears to be a distinctive feature, and I am not sure that a shorter stem would not convey an idea of squatness, so fatal to the artistic value of numerous florists' "improvements."

Almost all Tulips possess a more or less beautiful eye, and the Darwin Tulips are often enhanced in beauty by an eye of lovely character. Some months ago, M. Krelage of Haarlem was so good

* Nippon, central and largest island of Japanese Empire.



FIG. 121.—TULIPA WILSONIANA: COLOUR OF THE FLOWER BLOOD-RED. (SEE P. 332.)

as to send me a new set of bulbs, and now they are in flower it may be interesting to notice the characteristics of some of the most effective varieties; a very few, not mentioned, do not appeal to me, but their very light shades may be very delicate and attractive to others, and a position

more fully open to the sun might give the colours a greater amount of precision. The shade for half the day obtained at the foot of a wall running north and south is of some advantage, no doubt, in prolonging the flowering season. The following I like the best:—Europe, a fine scarlet with white

eye, and ring of violet between the two colours; Clara Butt, a lovely pink, with violet, white, and slate hading at the base, each inner segment with white, median lines; Rêve de Jeunesse, a beautiful lilac with blue centre; Gretchen, a most charming flesh pink, white eye, with pale blue ring; Harry Veitch, a fine scarlet with purple centre, and a pure white ring, both colours pointed upwards in the middle of each segment; William Copland, beautiful rosy-lilac with violet and white centre; William Pitt, robust scarlet, blue and white centre; Landelle, a fine rose shaded with paler colour, reddish lilac centre; Rev. H. Ewbank, dark lilac shaded to nearly white, nearly white centre; Fra Angelica, large and dark black-purple, each segment blue at the base and white-edged; Joseph Israels, another of black-purple colour, but smaller, without an eye, except that each segment at the base is margined with white; General Kohler, red with blue-lilac centre; Gustave Doré, rose shaded with paler colour, each inner segment with two white median lines inside and on the back; Suzanna, purple-lilac, shaded white, white eye with blue and dark purple ring; Bridesmaid, segments rose inside, shaded to white outside, flower not formal in shape; Parthenope, a fine bold flower of lilac-rose colour, segments margined with white, and with white median lines inside; Pride of Haarlem, rosy-red, blue eye, one of the best; Nauticus, red with lilac shade, bluish base, two white median lines inside of inner segments; Kate Greenaway, white with flush of lilac, blue at the base; Ed. André, lilac shaded to white, pale centre; Reine Wilhelmina, a fine flower of regular shape, very pale lilac, flushed with darker colour, yellowish-white at base inside; Nymphe, pale flower flushed pale purple, outer segments with margins incurved. I could not venture to say that these Tulips never "break." I have an old set which in some instances has broken, but this, by a well known market-grower has been attributed to the naturally poor and dry character of the soil of this garden. Breaks, however, in my experience, do not occur for some few years, and certainly there is no other recognised race of Tulips which performs the same valuable service in our gardens. R. Irwin Lynch.

TREES AND SHRUBS.

DECIDUOUS FLOWERING SHRUBS IN SEASON.

MAGNOLIA stellata, the first of the Magnolias to open its flowers, which are pure white and starlike; it is an effective plant, although the flowers are not so large as those of some other species of Magnolia. *M. conspicua* has a much larger bloom, white, with a faint tinge of purple on the outside, at the base of each petal. *M. purpurea* Lenné is another handsome variety with flowers of a light purple, approaching to white towards the edges of the petals. *M. Soulangeana nigra* is a little later in opening than the former varieties, and the shape of the blooms is quite different; having more pointed petals of a dark Plum colour. Forsythia viridissima has been very showy here this season; its small yellow-coloured flowers somewhat resemble those of *Jasminum nudiflorum* in being produced before the leaves.

Cerasus Watereri is very beautiful and effective at the present time, with its clusters of semi-double Peach-coloured blooms fully 2 inches in diameter. *C. James H. Veitch* is similar, but of a deeper colour. *Pyrus Malus floribunda* is one of the most beautiful and ornamental shrubs of its season, the branches being loaded with a profusion of brilliant crimson buds, which, when expanded, become pale pink. *Pyrus* (or *Cydonia*) *japonica coccinea*, has leaves which in the young state have a metallic-like colouring; blooms of a dark red colour.

Exochorda grandiflora resembles *Deutzia gracilis* in its erect racemes of bloom, which are of a purer white when in the bud than when fully expanded. *Ribes aureum* should be more commonly planted

than it is. It is a good foil to the crimson-flowered Currant, *R. sanguineum*. *R. americanum*, though interesting, is not so showy, and resembles, in its blooms, the common red fruiting Currant. *W. H. Perkins, Dorset.*

THE THINNING OF FRUITS AND FRUIT BLOSSOMS.

WHEN in years like the present wall-trained and cordon Pears blossom profusely, it is good to reduce the number of the blossoms. It is not an operation that gardeners generally practice; still, where time will allow, the trees are benefited by it. For example, a few years ago, the Apricot-trees at this place set so many fruits, and I let them remain much too long before thinning them, this being sometimes done as a safeguard when Apricot-trees cast their fruits in great numbers; but I think it defeats its purpose as to fruits dropping, it being impossible for the trees to mature so many fruits, so Nature does the thinning. Whereas, if the bloom be thinned instead, those that are left for setting are much better in every way, as I have proved, scarcely any fruits being cast if thinning is taken in hand before the seeds stone and the energies of the trees overtaxed.

Apricots of all fruit-trees suffer soonest from excessive cropping, and especially in light or very porous soils, and need severe disbudding and thinning. Cherry-trees on walls bloom very freely, but the blooms then set badly, and a great proportion of them drop at or about the stoning period. It would allow of a much better crop to set if all weakly and badly placed blooms were removed before they open.

In some cases this kind of advice would be thought out of place, many gardeners asserting that it is premature to thin till it is seen what blooms have set, still, I contend that early thinning conduces to good setting. Of course, thinning is not everything; trees sometimes lack strength from other preventible causes, and one season's thinning will not remedy this; and the operation takes time for its performance, although labour can at this season be better spared than later. Pears are an important fruit in most gardens, and if of good size, and well finished, the fruits are much valued; and, generally, I am sure if thinning were more practised, better results would follow. I have read with interest the notes appearing in the *Gardeners' Chronicle* of late on the value of different varieties of late Pears, and it is certain that if the varieties named by the various correspondents were thinned early, especially such varieties that fruit in clusters, the results would be very satisfactory. Those who grow for the market know the value of fine samples, and how poor are the returns for inferior ones.

Cordon, espalier, and bush Pears are alike benefited by early thinning. Another point is that aphids, so destructive to fruit in its early stages, has less chance of doing harm if growth be strong, as more resistance is offered to an attack. Peach and Nectarine-trees need to have the blooms reduced in number, or the trees become greatly weakened. If the work be carried on at short intervals of time, there will be nothing to fear from thinning. *G. Wythes, Syon House.*

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM × WILCKEANUM OAK-WOODENSE.

THE greater part of a grand inflorescence of what at a glance appears to be a superb yellow, red-brown blotched, *Odontoglossum crispum* is sent by its fortunate possessor, Norman C. Cookson, Esq., Oakwood, Wylam, Northumberland (gr., Mr. Wm. Murray). An examination of the labellum and of that tell-tale feature, the crest, indicates plainly

that it is a form of *O. × Wilckeanum* of the *O. × W. Queen Enpress* class, but with a nearer reversion to *O. crispum* than is found in others of the section. The portion of the spike bears nine flowers, each from 3½ to 3¾ inches wide, and of a bright canary-yellow colour; the lip being of a darker shade than the rest of the flower. The sepals, which are tinged with rose at the back, bear two to three large, red-brown blotches; and the fringed petals and lip one irregular blotch of red-brown colour towards the centre of each. The crest of elongated yellow ridges is decorated with reddish lines, and the front surface of the yellow column is tinged and streaked with red. For comparison, I have an inflorescence of another good yellow and brown *O. × Wilckeanum*, but which partakes in a much more marked degree of *O. luteo-purpureum*; the variety *Oakwoodense* by its affinity to *O. crispum* being much better in every respect. It is an event in the career of any Orchid establishment to flower two such fine and widely dissimilar *O. × Wilckeanum* as this and the one previously described at the same time. *J. O'B.*

SIR TREVOR LAWRENCE'S ORCHIDS.

Never before has the collection of Orchids so patiently got together by Sir Trevor Lawrence, Bart., at so much expense, been in finer condition, or so productive of flowers, as at the present time. Each house has a number of choice plants in bloom, and in every department the excellent condition of the plants, whose progress can be readily gauged by the successive growths, affords ample proof that Orchids do not degenerate at Burford. The most remarkable progress is to be seen among the *Odontoglossums*, which in the matter of flowers are also at their best at the present season, the houses being a grand sight with the innumerable stout spikes in all stages of growth, the flowers throughout being of the best types, and varying from the beautifully formed clean white type, which is the favourite at Burford, to the heavily-blotched forms of the class for which such high prices are given whenever one appears on the market. Among these spotted forms are several new ones flowering for the first time, one of them especially being equal to the best which has yet appeared. The beautifully-formed large flowers have a flame-like flush of purple issuing from the centre, the sepals and lip bearing a large dark-coloured blotch, and the petals and sepals some smaller spots. Here, too, is the handsome *O. crispum purpurascens*, recently figured in the *Gardeners' Chronicle*, and many other fine plants which an *Odontoglossum* collector who recently visited the collection characterised as "great lumps, the like of which I have never seen growing in their native habitat." Some of the plants have four or five spikes. One grand example of *O. Hallii* has five spikes of altogether seventy-five flowers; a splendid *O. luteo-purpureum* has twenty-one flowers on the main spike, and six on a branch, and all the others are proportionately good according to the time they have been under treatment. Also in bloom are some fine *O. × Andersonianum*, *O. × Wilckeanum* (two of them home-raised), *O. crinitum sapphiratum*, and other *Odontoglossums*; and in the same cool houses a fine show of *Oncidium concolor*, a good example of the rare *O. × Larkinianum*, with large, bright yellow lip; the singular *O. O'Brienianum* from Paraguay; *O. Marshallianum*, *O. cucullatum*, and other *Oncidiums*; *Diaea grandiflora*, the bright-tinted *Cochlidia Noziana*, and the pink-coloured *C. sanguinea*, exhibiting its peculiarity of flowering first from the extremity of the inflorescence and continuing towards the base.

The Masdevallia-house has a brilliant show of the many forms of *M. coccinea* Harryana, from purple to brilliant scarlet, making a most dazzling display. With them were noted the very remarkable *M. ventricularia longicaudata* of Consul Lehmann, whose pretty crimson and yellow flowers have the tube of the perianth enlarged beneath into a large pouch. Not long ago a scrap or two were

got over alive, and now at Burford one of these has formed a charming tuft. Others noted were the little zebra-striped *M. O'Brieniana*, *M. × Stella*, *M. × Courtauldiana*, *M. × Bocking* hybrid, *M. × Shuttryana*, *M. deoraa*, in bud; *M. Endresii*, *M. Wagneri*, *M. × Ajax*, *M. pachyantha*, the true *M. melanoxantha*, *M. leontoglossa*, a showy lot of *M. Veitchiana*, and *M. ignea*, and an interesting lot of curious *Pleurothallis*, *Ostomerias*, and other singular little species. As an example of fine culture, a large pan of *M. racemosa Crossii*, with hundreds of leaves, was very remarkable.

A very attractive feature in the Burford collection is the presence of a large number of pretty and curious Orchids from all parts of the world, some or other of which are always to be found blooming among their showier brethren in most of the houses. Perhaps the most singular and attractive of these are the *Cirrhopetalums* and *Bulbophyllums*, which are divided into two sections, and disposed in cool or warm houses as may be thought best suited to their needs. The larger section were suspended in the warm house in which the *Phalenopsis* thrive on the one side, and the growing *Dendrobiums* are accommodated on the other, some of both genera being still in bloom. Among the *Cirrhopetalums* is a grand specimen of *C. Colletti*, with a dozen handsome umbels of fringed flowers; and *C. picturatum*, *C. fimbriatum*, and others; the always attractive *Bulbophyllum barbigerrum*, with its feathery, continually moving lip; and the singular *B. saltatorium*, and *B. tremulum*, of kindred structure; *B. nigripetalum*, with curious blackish-purple flowers; *B. patens*, a rather showy purple and white species. There is wide range in this remarkable genus, from the pigmy of an inch or two in height to the large *B. longisepalum*, with long flowers like a bird's-head with a long beak; and the showy *B. grandiflorum*, fine specimens of both of which rare species have bloomed well. Other species noted in this house were *Calanthe veratrifolia*, with five spikes; *Phalenopsis Sanderiana*, *P. Luddemania*, *Galeandra nivalis*, and *G. Devoniana*; *Eria anchorifera*, the remarkable *Aceranthus dentiens*, with large, inflated green flowers bearing a singular thickened spur; *Dendrobium × Dalhousienum*, *D. × Nestor*, *D. cucullatum giganteum*, and others of its class; *D. Parishii* and *D. P. album*, still a very rare albino; *D. crepidatum* and its variety *labello-glatro*, *Bot. Mag.*, t. 5011; *D. formosum giganteum*, fine plants of *D. Dalhousienum*, *D. fimbriatum*, *D. thyrsoideum*, and other showy species.

The intermediate-house range has in flower in the first division two of the showy *Cynorchis purpurascens*, *Leptotes bicolor*, *Eria extinctoria*, one of the smallest of Orchids, bearing two or three slender sprays of flowers; *Polystachys bracteosa*, with singularly flattened bulbs; *P. villosa*, and *P. cerea*; also the curious and little-known *Campanemia uliginosa*; *Epidendrum Linkianum*, *E. triste*, and another little species, flowering together; a mat of the pretty *E. polybulbon*, the sombre-looking *E. varicosum*, the tall-growing scarlet *E. radicans*, *E. × O'Brienianum*, *E. pristis*, and *E. Ellisii*; the pretty white *E. Claesianum*, fine plants of *E. Endresii*, *E. Endresio Wallisii*, *E. elegantulum* and its white-lipped variety *leucocheilum*, *Bifrenaria Buchaniana* and *B. Harrisonia*, and other species. In this house Brazilian *Miltonias* thrive admirably, the form of *M. flavecescens* known as *Claesiana*, being in flower. The bank of *Sobralias* was in fine condition, but few plants are yet in bloom. In the same house was a fine batch of *Miltonia vexillaria* just beginning their show for the season; also some of *M. × Bleumii* varieties, all of which were in splendid health. Other remarkable things noted were *Trevoria Chloris*, the new genus named after Sir Trevor Lawrence; a fine mass of *Helcia sanguinolenta*, *Oncidium pulchellum*, *Phrysus Ortgiesiana*, *Utricularia montana*, and many kinds of *Cypripediums*, some of them having been in the collection for many years, and notably plants of the original stock of *C. Spicerianum*, obtained when a small plant of the species was thought cheap at 25 guineas.



FIG. 122.—THE ORCHARD-PATH, PENTILLIE, CORNWALL.

Passing through a small house filled with *Catasetums*, we arrive at the East Indian-house. Here the *Aerides* and *Saccolabiums*, which used at one time to give trouble even in the same house, are now in fine health, some of them being in flower. One fine mass of *Aerides multiflorum* affine had four showy spikes, and others of the variable species were in bloom. *Dendrobium Jerdonianum* was profusely furnished with orange-coloured and *D. batulum* with white flowers; *Cattleya citrina* had good blooms; and the large batch of Burford hybrid *Calanthes* were in superb condition.

In another range there were in bloom *Maxillaria præstans*, *M. Houtteana*, *M. Sanderiana*, *Aspasia lunata*, *Odontoglossum Ruckerheimi*, *O. rubulosum*, *Cymbidium madidum*, *C. tigrinum*, *Cœlogyne elata*, with many spikes; *Dendrobium infundibulum*, with twenty-four large white flowers; *Cattleya Skinneri*, of the best old type, with eight richly-coloured trusses of flowers; and many other good things.

The *Cattleya*-houses had a good show of *Cattleya Mossiæ*, two of the best being the Burford variety of the pure white orange-throated *C. M. Wagner-*

iana, with eight flowers, and the very handsome and distinct *C. M. Goossensiana*. Also in bloom were *Lælia purpurata* in variety, one plant having eight spikes of thirty-six flowers; a fine *Cattleya* × *Wm. Murray*; a richly coloured unnamed hybrid of *Lælia tenebrosa*; a noble example of *L.-C. × Henry Greenwood*, *L.-C. × Phœbe*, *L.-C. × Hippolyta*, and others of the orange coloured crosses of *L. cinnabarina*; the rare *Cypripedium præstans*, *C. × macrochilum*, and its opposite, *C. × microchilum*, the latter with finer flowers than usual, and a large number of species of unusual merit. Mr. W. H. White, the Orchid grower at Burford, is justly proud of the fine condition of the plants under his charge, and regrets that Sir Trevor Lawrence's desire to abstain from occupying the space necessary to stage even a representative group at the Temple Show will prevent him from showing there this year. Each year the demands for space increases, and it is thoughtful of the President to give place to others.

PENTILLIE CASTLE.

PENTILLIE CASTLE, the seat of Mr. William Coryton, stands in an exceptionally favoured site, overlooking, from the wooded hills on its Cornish side, the silvery windings of the beautiful Tamar. The following description of its appearance, as, in the springtide of the year, it opens to the view from the deck of the river steamer, is well worthy of reproduction, so graphic, and yet, withal, so truthful is the word-painting:—"The ground rises steadily, and the trees grow thicker on it till, just where the hillside takes its most gorgeous spring colouring of bronze and golden-green from the mingled growth of Ashes, Beeches, and Oaks, the towers of a great, grey, castellated mansion rise flashing in the sunlight, and we have reached Pentillie. I do not know if there is on any other river in this country a house placed so finely as this, but I do know there is none in all the West to compare with this stately vision of terraces and towers, half hidden by the foliage."

The spacious grounds of Pentillie Castle are studded with fine trees, and contain a Lime avenue—an avenue that is "a thing of beauty" at all seasons of the year, whether in the winter, with its myriad slender branchlets clearly outlined against the sky; in the spring, when the pale green of the young leaves paints the tree-tops with tender colour; or in the summer noons, when the dense foliage throws a grateful shade, and the air is fragrant with the scent of countless blossoms and murmurous with the hum of bees innumerable. Facing the house at some little distance is a gently rising lawn, on which are tastefully grouped *Azaleas* and other flowering shrubs, that in the late spring create a colour-effect that baffles description. The *Azaleas*, planted many years ago, at a time when their merits as decorative, outdoor subjects were not recognised by one in a thousand, have attained enormous dimensions, and glow afar in their sheets of sulphur, saffron, and red. A splendid specimen of *Pieris formosa*, 18 feet in height, and 30 feet in diameter, held to be the largest in England, is at this time white with its branching flower-clusters; while hybrid *Rhododendrons* of large size display their crowded bloom-trusses against a background of verdure. The great *Camellias* are not yet flowerless, and amongst the scattered Oaks that terminate the grassy slope, giant *Kalmias* bear their shell-pink cupped blossoms. In the spring, when the Apple-trees spread their canopy of pink and white over the lush grass, the orchard-path (see fig. 122) discloses a vision of unstudied natural beauty. Colonies of *Primroses* spangle the grass by the path-side, their pale yellow here and there intensified by the purple-blue of clumps of Dog Violets. Daffodils away their golden heads in the spring breeze, "Lady-smocks all silver white" reveal their pure pale colouring; in the distance the Wood Hyacinths, or "Blue-bells," spread a veil of shimmering azure; and now and again a tall *Columbine* rears its spire of drooping blue flowers above the lovelier herbage; while on the

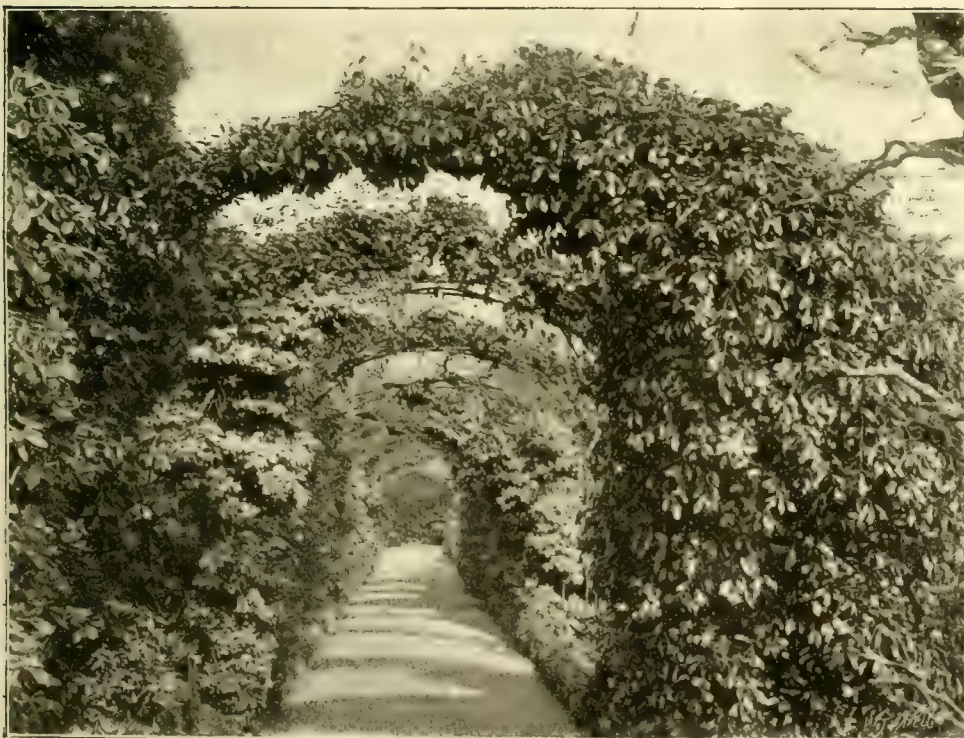


FIG. 123.—TRELLIS-WALK AT PENTILLIE, CORNWALL.

verge of the path the marbled leaves of *Cyclamen neapolitanum* nestle closely against the sward. Hard by grow great Nut-bushes, and in the boughs of some of the orchard patriarchs the Mistletoe flourishes. In one part of the gardens a narrow walk is completely covered for a length of about 20 yards with *Cotoneaster microphylla*, trained over trellis-work.

At the back of the house a wide terrace looks over sloping lawns and flowering shrubs to the Tamar wending its course in sweeping curves between the wooded banks far below. Beneath the terrace is a wall-backed herbaceous border stored with a goodly collection of handsome perennials, the wall being covered with flowering growths. Access to this border is obtained by a flight of stone steps leading down from the terrace, at the further end of which, close to a clock-tower, stands a fine spreading tree of the Exmouth variety of *Magnolia grandiflora*. Leading from the higher to the lower terraces is a walk spanned by numerous arches (see fig. 123), over which are trained diverse climbing plants, comprising *Wistaria*, *Vitis*, *Coignetia*, *Honeysuckles*, *Stauntonia latifolia*, *Clematis* in variety, *Roses*, and many others. Lilacs of different sorts, *Deutzias*, *Spiræas*, *Rhus Cotinus*, and a large number of flowering shrubs of varied species deck the verges of the lower lawns, and along a sunny buttressed wall are grown a wide selection of rare, half-hardy subjects. Good examples of the Fan Palm (*Trachycarpus excelsus*) are also present. A flying visit, such as that of the writer's, to the gardens of Pentillie Castle, unfortunately precludes a more detailed description of their attractions. *S. W. F.*

NURSERY NOTES.

MR. JAS. SWEET'S NURSERIES.

WHEN walking through the various houses at the Oakleigh Park Nurseries, Whetstone, a fortnight or so ago with Mr. Sweet, he said that his business in respect to plants was equal to that in respect to fruits but the times have passed when Grape-growing was attended with large profits. Said Mr. Sweet, "In the old days I used to say, 'Close that house until the Grapes will command 2s. more a pound,' and generally this could be done. Not so now," and Mr. Sweet declares he is by no means convinced that Grapes can at present be grown at a profit, unless the vineries are used for some other purpose during a period of the year.

At Whetstone, all the vineries at some period or another are utilised for plant-growing, and there is to some extent, double cropping. Some of Mr. Sweet's vineries are 400 feet long, an enormous length, and there are many of them; yet only three varieties of Grapes are grown, viz., Black Hamburgh, Gros Colmar, and Black Alicante. In young vineries, where the canes do not yet cover the space they will do eventually, Tomatos are planted out in the centre of the house, and a large quantity of fruit is obtained before the Vines are capable of yielding a full crop.

In the plant department, the species which Mr. Sweet cultivates most largely are those known as hard-wooded plants; *Ericas*, for instance, are cultivated in thousands and thousands, and greater variety is included than one would expect to find in a market nursery—indeed, all the best sorts may be seen there. One or another variety is in full bloom, and fit for market in nine of the months in each year, the exceptions being August, September, and November. Plants of the following sorts are at present in bloom, and the plants are of capital quality. *E. Cavendishiana* (yellow), *E. magnifica* (rich pink), *E. candidissima* (white), *E. Wilmoreana*, and a white sport from this; also a large and handsome flowering variety which Mr. Sweet calls *E. W. superba*, and *E. hybrida*, &c. This last mentioned Heath is a very distinct one, and has reddish-rose coloured flowers. All the thousands of plants required for stock each

year are raised from cuttings, and most gardeners will admit that such plants are not easily propagated in such a manner and without loss. Some of them are ready for sale when they are fifteen months old, but others do not leave the nursery for two years, or even three years and three months. Such plants as these are of course sold to West-end florists, or to the trade, and rarely find a place on the coster's barrow, the cost of production being considerable.

We saw several hundred plants of *Crassula* (*Kalosanthes*) *coccinea* just being conveyed from the houses, to a position out-of-doors. Some of the plants are hybrids, raised for the purpose of getting an earlier flowering scarlet *Crassula*. A batch of the earliest plants obtained from the continent will flower during the present month. *Boronias* are not exactly "market" plants, but Mr. Sweet finds a sale for some thousands of the sweet-scented *B. megastigma*, *B. heterophylla*, as Mr. Sweet remarked, is a very beautiful plant, and he cultivated this and sent some good specimens to the florists for them to report upon. After a time a West End firm replied "Too much like a wax plant, but could sell a limited quantity if they could be done at six shillings a dozen," or rather less than is obtained for the white flowered *Marguerites*, which require but a few months cultivation, and give so little trouble. Mr. Sweet has had such a long experience of the trade, he has many very curious stories connected with the sale of different plants, that we cannot reproduce here, but which afforded us great interest.

Of the white *Marguerite* such a number is grown that we think it will be best not to write that number lest some of our readers, far removed from the London market, and with an imperfect knowledge of its demands, may have difficulty in accepting same, and Mr. Sweet, one of the most modest men we have ever met, be accused of exaggeration. But we may say that he is probably the largest grower of these plants, and he does them well, obtains a good base to his plants, a large number of shoots, and therefore a great wealth of flowers. We have never seen finer *Mignonette* than Mr. Sweet grows. Like most market-growers, he has saved his own seeds for years. The spikes of flowers are nearly 3 inches through them, and the leaves are 1½ inch wide. The sweet-scented *Cytisus* (*C. racemosus*) was blooming in hundreds, the stock sold each year being something like 14,000 or 15,000. The pretty *Saxifraga paniculata* is also grown in some numbers.

When Mr. Sweet purchased his present nursery from a Mr. Davies, there were some plant-houses there already, and two or more of these still stand. One contains Vines thirty years old (an infrequent circumstance in a market nursery), but at the end was planted a *Camellia*, which has succeeded since to so large a degree that Mr. Sweet has enlarged that portion of the house for its needs. One year the tree yielded 14,500 blooms for market. It is one of the very finest we have ever seen, and there is a large number of other trees in different houses that furnish *Camellia* flowers in huge quantities for market. *Cinerarias* and very many other plants are cultivated at this nursery, and the entire plant department is personally controlled by Mr. Sweet, the fruit department being under the immediate management of Mr. Sweet, junior. *P.*

THE WEEK'S WORK.

THE FLOWER GARDEN.

By T. H. SLADE, Gardener to Lord POLTIMORE, Poltimore Park, Exeter.

Bedding out may now be carried on vigorously, a beginning being made by putting out the hardier plants first, whether as edgings or for carpeting beds. If the "dot" plants to be used over the carpet are too tender for present planting, spaces may be left for these to be planted. *Pyrethrum parthenifolium aurea variegata*, *Koniga maritima variegata*, *Echeverias*, *Ageratums*, and *Pelargoniums*, if thoroughly hardened off, may also be set out, except in situations

where late frosts are apt to do damage. In the latter case, the first or second week in June will be quite early enough for plants which are in any degree tender. *Coleus*, *Alternanthera*, *Iresine*, *Anthericums*, &c., should be the last to be planted. The soil should be well tilled before the plants are set out, and if it be too friable and loose, water should be applied the day previously, and then the clods will the more readily be broken down with a rake. This is a very necessary proceeding for all plants of small growth, and those possessed of fine roots. Beds that have been recently occupied with plants will require more preparation than those which have been lying fallow for some time. Let all plants be staked, and tied securely as soon as planted, if they are likely to be swayed by the wind. Remove all flowers from the plants when planted.

Cannas.—In parts of the country where these plants pass the winter safely in the open ground, the soil around them should be removed, and dressed with some half rotten manure, covering it slightly with earth. Such plants make strong growth, and flower late in the season. *Cannas* which are growing in pots may now be planted, and if of good size, with several shoots, they will flower early in the summer if the beds are properly prepared; and the two batches of plants will keep up a display till autumn sets in.

Violas and shrubby *Calceolarias* that have been planted will require water occasionally if bright weather continues, and as frequent applications soon cause the surface to cake, the beds should be hoed the following day.

Late Tulips.—Varieties of *Tulipa Gesneriana* and the Parrot Tulips are now in full beauty, and when we consider that they flower after the early Tulips, &c. are over, it is a wonder that they are not more commonly grown. The Parrot Tulips are very beautiful for planting at the edges of shrubberies, or on carpets of hardy plants. Tulips left in such positions should be labelled so as to prevent them being disturbed. The bulbs may also be lifted when the stems lose their brittleness, and be planted elsewhere, or stored for autumn planting. Tulips that remain where they have flowered, should be lifted every second or third year, the strongest selected for planting, and the smaller bulbs planted in nurse-beds to grow into flowering size.

Stocks and *Asters* should be planted forthwith where they are to bloom, in soil that is made fairly rich. Plant, if possible, in showery weather, and keep the soil moist till they are established, particularly for the *Stocks*.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bicton, East Budleigh, Devonshire.

Celery.—The February sowings having been transplanted into beds, will now be large enough for planting in the trenches, after affording a thorough application of water to plants and trenches one day before planting. Use a trowel in lifting and planting, a ball of soil being taken with each plant. Set out the plants at 10 inches apart, and if in double rows it is more convenient when earthing up if the plants are placed opposite each other. A few of the bottom leaves and suckers should be removed. A severe check to growth is caused if the plants are allowed to get of a large size before they are planted, more especially if any shortening of the leaves has to be performed, and shading has to be afforded after planting. When a trench is planted afford water freely, and do not let the plants lack water afterwards. Trenches may be dug in land that has carried late Broccoli or an early crop of Cabbage. Thin out or prick out into nurse-beds the plants from later sowings, and keep them well supplied with water in dry weather.

Potatoes and *Cauliflowers*.—Ply the flat hoe among early crops of Potatoes, and mould up the rows a few days later. If the plantations are extensive, a horse-hoe may be employed as soon as the tops are discernible, but instead of the mattock a small plough may be brought into requisition for moulding up, which should be performed after rain has fallen, and while the soil is still moist.

Broccoli.—This crop being nearly over, the land may be deeply dug for a crop of Peas. Broccoli (*Dilcock's Bride*) has done capitally this year, and proved nearly as late as *Model* and *Late Queen*.

Peas.—Mould up advancing crops, and stake the rows forthwith. As soon as the earliest Peas have podded, if the weather should remain dry, the plants

will be benefited with a thorough application of water and a slight mulch of litter on each side of the rows.

Beans.—Nip out the points of Broad Beans as soon as the pods begin to form at the base of the stems, earth up advancing crops, and make another sowing of Green Windsor.

Pricking out.—The earliest sowings of Cauliflowers, Broccolis, and Brussels Sprouts out of doors will be fit for transplanting into nursery lines at 4 inches asunder; and where the ground that will carry later crops of these is likely to be occupied for some little time longer, it will be advisable to treat them as advised, so that when planting them in a month or six weeks from now the plant will lift with a nice ball of soil and roots, and receive little or no check. I prefer to plant the earlier sowing direct from the seed bed into the quarters, instead of into nurse-beds.

French Beans and Runner Beans.—Earth up the first sowings, and make another sowing of Ne Plus Ultra or Canadian Wonder (Red Flageolet) in drills drawn 2 feet apart. Runner Beans should have the sticks put to them soon enough to prevent the plants falling over, and after they have been earthed up. Two more sowings should be made of the latter, one immediately, and another in about ten days.

Rhubarb.—Remove the flowering shoots from established plants, never allowing them to come into flower; and in the case of seedling Rhubarbs thin the plants, and leave them at about 6 inches apart, afterwards hoeing the land between the rows.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. I. MEASURES, Esq., Cambridge Lodge, Flodden Road, Camberwell.

Dendrobium formosum giganteum.—Than this species there is no *Dendrobium* in cultivation more worthy of general cultivation. It produces its flowers in the early autumn, just at a time when flowers are getting fewer out of doors, a trying period for the gardener in private places, where the demand for cut flowers is large, and I would, in such circumstances, advocate the cultivation of this species. The flowers last for several weeks in perfection on the plant, and they last a long time when removed from the plant. The species is generally looked upon as being difficult to manage and keep in perfection for any great length of time after importation, and doubtless there are many illustrations of this fact; but is the cause of this deterioration always fully considered? The plant is usually procured as imported at about the present season of the year, and is immediately potted and placed in the warm house in an atmosphere loaded with moisture, and all the available light that can be given with safety to the other occupants of the house is afforded. The result is a most satisfactory growth, which in time produces flowers that are all that could be desired. The plants are then given a long season, of rest, and perhaps the same conditions are afforded the deciduous section of *Dendrobiums*. The following year growth is much diminished, and deterioration begins, clearly showing that the treatment of the plant hitherto pursued is at fault. How different is the case when the plant can be treated to great heat, combined with the full effects of the sun's rays falling on them unprotected? Those who have observed the admirable results obtained by Mr. Hudson, at Gunnersbury House, and others, who are enabled to afford a similar kind of treatment, will be convinced that the principal cause of failure will be found in the fact that when grown with other Orchids needing protection, it does not get sufficient light to harden the growth at the maturing stage, and the dull season of the year approaching so quickly after the plants have flowered, affords no possibility of the growths becoming sufficiently ripened to flower satisfactorily the following year. At Gunnersbury, the plants are grown suspended from the roofs of the Fig-houses, which are filled with unusually large panes of glass, and the plants enjoy every available ray of sunlight. The plants are syringed overhead, and treated similarly to the Fig-trees, which are grown below them. Seedlings that were imported on some of the plants have made remarkable progress, which clearly shows the treatment to be in every way satisfactory. The plants are placed under cooler and dryer conditions after the flowering season is past. I have also grown this species satisfactorily in a stove, which was set apart for the cultivation of *Codiaeums*. Here the conditions scarcely differ from those pursued by Mr. Hudson. Although it would be unreasonable to say that the plants may be retained in a healthy condition for an indefinite period, I am convinced that

under the treatment sketched out above they may be retained in good condition for several years in succession. It is a plant that is best accommodated in well-drained baskets, in a compost consisting of good turfy peat and living sphagnum-moss, in equal proportions.

FRUITS UNDER GLASS.

By MAJCOLM MCINTYRE, Gardener to Sir CHAS. TENNANT, The Glen, Innerleithen, Peeblesshire.

Vines with Ripe Grapes.—Afford fire-heat only to prevent the temperature falling below 60°, and to admit of a rather free circulation of air; and mulch the interior border with dry litter, nothing being better for this purpose than Oat-straw. A mulch prevents evaporation, and keeps the border moist. A little moisture in the air is not injurious to the Grapes, and is highly beneficial to the foliage, which ought to be kept clean and healthy. Should the Vines be infested in any degree with red spider, there is no safer remedy at this stage than to carefully sponge the leaves with soapy water. Where ripe bunches of Black Hamburgh Grapes must hang for some time longer, a slight shading should be afforded, such as that given by a double thickness of herring-nets, placed over the roof lights, so that the colour of the fruit be not spoiled.

Temperatures.—The bright weather, with proper attention paid to the ventilation of the vineries, will greatly improve the foliage, as little fire-heat as possible being applied, as with sun-heat and plenty of atmospheric moisture more real benefit is obtained in a week than in a month of dull weather with artificial heat. Vines in full growth may be allowed an increase of the temperature to 85° or 90°, closing the vinery when the warmth is 85°, and employing fire-heat only to maintain a temperature of 70° to 75°, and to prevent it falling below 60° or 65° during the night. These remarks apply only to Vines in full growth; those with fruit approaching ripeness should have a rather freer circulation of air, and those that are colouring should be kept cooler, as the sun's rays act very powerfully when moisture condenses on the Vines. Afford some slight degree of ventilation during the night, increasing it early in the day.

Training, stopping, &c.—The shoots should be tied in as they lengthen, bearing in mind the benefits derived from a full exposure of the foliage to sunlight. Take measures to destroy insect pests on their first appearance. A few leaves infested with red-spider are soon cleansed with a sponge and soapy water, but the work of cleansing a house is a tedious affair, and procrastination in this matter is generally rewarded by ruby-coloured berries, instead of the true sloe colour. Stop the shoots at every increase of growth, not allowing them to get a yard long, and then to cut them back.

Late Vines.—These will now be in flower, and a minimum temperature of 70° should be maintained. Shake the Vine-rods twice a day, in order to distribute the pollen; but in the case of shy setters have recourse to artificial impregnation, going over the bunches carefully with a camel-hair brush. Thin the free-setting, large-berried varieties when they are in flower, also those that are liable to have closely-set berries. While the Vines are in flower the laterals should not be stopped, but the gardener should wait till the bunches are fairly set.

THE HARDY FRUIT GARDEN.

By C. HERRIN.

The Morello Cherry.—These fruit trees are now blooming profusely, and they will at this date be in no danger from frost, although the air at night is still cold, and the wind easterly. Where the blossoms are very numerous, they may, in the case of wall trees, be thinned by rubbing off those which press against the wall, and the doing of this will relieve the trees and save the fruits later on. In the case of a retentive soil, and where the border is much caked, a layer of the surface 2 inches thick may be removed, and other soil substituted. This should consist of a goodly proportion of mortar rubble mixed with fresh soil. If fresh soil be not available, mortar rubble alone may be placed on the surface, and slightly pointed in; not of course, then, removing much of the surface soil.

Sweet Cherries.—The cold weather has checked the growth of these trees, and the black aphid has appeared on the young shoots in many instances. This pest does much harm, and must be destroyed by syringing the trees with Quassia water, XL—All or

other similar insecticide, having recourse to repeated applications till every trace of aphid has disappeared. As the fruits are now swelling fast, syringing with these mixtures will not prove injurious unless applied of too great a strength, and care should be taken not to exceed the strength given by the manufacturers. The curled-up leaves of the Cherry form a hiding-place for caterpillars and grubs, and these should be killed by squeezing the leaves between the forefinger and thumb. On warm mornings the trees may be well syringed, or washed with the hose, clear water being used, which will greatly assist in keeping the trees free from insects.

American Blight.—The woolly aphid (*Schizoneura lanigera*) confines its attacks chiefly to the Apple, and is especially abundant in old orchards. One of the worst cases I have ever seen was in the county of Sussex last summer, where the old stems of the Apple-trees were covered with their large, woolly-looking patches, and some were hanging from the branches. An effectual means of ridding the tree of the pest at this season is to scrub all infected parts with soft soap or Gishurst Compound, using 3 to 4 ozs. to the gallon of water, using it in a warm state, and working it into a lather, and applying it with a moderately stiff scrubbing-brush with good bristles that will penetrate the crevices. This is for use on the old wood only. Quassia mixture and other insecticides may be applied by means of the syringe or garden engine, which will not harm the young growths and leaves, and a dressing of freshly-slaked lime scattered about under the trees and well trampled over will finish off any aphides that may fall from the branches. Where trees are badly attacked, the insects may be found on the roots near to the surface, and these should be laid bare, and deluged with strong soapy water, returning the soil soon afterwards.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HUSSEY PACKE, Esq., Prestwold Hall, Loughborough.

Tree Carnations.—Select plants intended to be retained for flowering, and place them in a cool, airy house or pit, affording them a partial rest prior to repotting into pots of a larger size this month or in June, and afterwards place them in a sunny position outdoors, and protect them from heavy rains. Plants which were struck early may now be potted in large 48's, in which they may be allowed to flower. A suitable potting compost will consist of turfy loam three-quarters, leaf soil one-quarter, with the addition of some charcoal and crushed lime rubble. Place in a span roofed frame till well rooted, then plunge them in a bed of fine coal ashes, affording protection against heavy rains. Remove the points of young growths of plants propagated later, repotting the plants as they may require it until placed in the flowering-pots in July.

Marguerite Carnations may be kept under glass until the *Souvenir de la Malmaison* Carnations come generally in flower, affording the plants farmyard manure or guano-water, the latter at the rate of $\frac{1}{2}$ oz. to one gallon of water. Prick out seedlings into boxes, and keep in cold frames till strong enough to come into large 60's.

Lilies.—The earlier bulbs of *L. auratum* of flowering age may be brought indoors from cold pits and frames when the early flower buds are formed, and at each alternate application of water diluted farmyard manure-water may be afforded them. Let the stems be provided with neat stakes, to which the stems should be secured as they grow in height. Late batches of *L. auratum*, *L. lancifolium album*, and *L. rubrum*, being sufficiently advanced in growth, may be surface dressed with rich loam and decayed manure in equal ratio, and from the present time place the plants out of doors on a thick floor of coal ashes. Syringe the plants in the afternoons of hot days, and support the stems in good time.

Campanula pyramidalis.—The large plants are now making rapid progress, and those which were placed in pots in the autumn may be afforded either guano-water of the strength above given or diluted farmyard manure-water of the strength of four of water to one of manure. The plants may remain outdoors until a fortnight previously to their being placed in the conservatory. Plants which were potted later, and of which the roots have not as yet filled the pots, should only be afforded clear water up to the time when the flower-spikes show prominently.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY,	MAY 25	{ Manchester Orchid Exhibition commences—closes May 30.
MONDAY,	MAY 27	—Bank Holiday.
WEDNESDAY,	MAY 29	{ Société Nationale d'Horticulture de France, Spring Show at Paris—closes June 3.

SALES.

WEDNESDAY NEXT.—Lilies, Begonias, Carnations, Perennials, Border Plants, Palms, &c., at Protheroe & Morris' Rooms.

THURSDAY NEXT.—Unreserved Clearance Sale of Bedding Plants, &c., at St. Mary's Nursery, Richmond, by order of Mr. W. H. Holah, by Protheroe & Morris.

THURSDAY, MAY 30, and FRIDAY, MAY 31.—Araucarias, Bay Trees, Bulbs, Hardy Perennials, Fancies, Stove, Bedding and Greenhouse Plants, &c., at Pollexfen & Morrison's Sale Rooms, Pilgrim Street, E.C.

FRIDAY NEXT.—Imported and Established Orchids, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick—57.5°.

ACTUAL TEMPERATURES:—

LONDON.—May 22 (6 P.M.): Max. 67°; Min. 49°.

May 23, 11 A.M.—Fine, N.E. wind slight.

PROVINCES.—May 22 (6 P.M.): Max. 68°, W. Ireland; Min., 50°, Orkneys.

The Temple Show.

GIVEN a fine day, and a site so well suited for the purpose as the historic Garden of the Temple, and who would want a Hall? Ah! yes, but there are circumstances to be reckoned with, among them the fact that we cannot always have the Temple Garden, and, convenient as that is, it is all too small for the purpose. But we must, for the nonce, leave aside all such considerations, and confine ourselves to the Temple Show of 1901. In point of magnitude it is the same as in former years, there is no possibility of increasing the space. So far as regards the quality of the exhibits, it was at least quite up to the average, and in some particulars it was better. The limited space, and the increased number of exhibitors, necessitated selection, and the consequence was that the exhibits were less monotonous, more varied, and less crowded than usual. Among the Orchids there were two noteworthy abstentions. Neither Sir Trevor Lawrence nor Baron Schroder exhibited, the former out of a chivalrous feeling that he would give others an opportunity of displaying their productions. What was thus lost in the quality of the exhibits was, in some degree, compensated for by the increased space gained, which allowed the plants to be better seen than when they are jammed as closely as they usually are. A very fine group of *Vanda teres* in full flower was shown at one end of the large tent, from Gunnersbury.

We give full details in another column, but we may here refer to a few of the more prominent exhibits. Some fine plants of show *Pelargoniums*, exhibited by Mr. Turner, reminded us of old times. The Roses were, as usual, glorious, and some very interesting. Among them was a Rose called *Soleil d'Or*, shown by Messrs. William Paul, of Waltham Cross, and stated to be the result of a cross between Persian Yellow and Antoine Ducher. The flowers are semi-double, of a yellowish-buff colour, with a faint tinge of crimson. The foliage is like that of Persian Yellow, but the flowering is that of a hybrid perpetual. *Leuchstern* is another novelty of the *Polyantha* section, with whitish flowers edged with pink. It was shown from Cheshunt as well as from Waltham Cross. A very remarkable exhibit of Moss Roses in pots was made by Lord Roths-

CHILD. It constituted a novelty at the Temple show.

Messrs. CUTHEBERT'S group of *Mollis Azaleas* was quite magnificent. Such a group has not been seen before out of Ghent.

The group of *Hæmanthus* from the Congo, shown by the HORTICOLE COLONIALE of Brussels, formed one of the most striking features of the exhibition. In our Supplementary Illustration we show one of the most remarkable of this group. Another plant from the Congo was exhibited by M. TRUFFAUT, of Versailles, under the name of *Musa rubra*, so called from the deep, almost black-red of its foliage. It is figured in another column.

Mr. CANNELL showed a group of *Cacti* exceedingly well grown, and comprising many interesting specimens. From the same firm came a group of a pyramidal form of *Myosotis* which was worthy of note.

Mr. BECKETT'S collection of vegetables was of extraordinary excellence, and attracted much attention.

There were several monstrosities in the shape of clipped trees as usual of late years, and there were more of the curious dwarfed Japanese trees, which seem to be taking the public taste. They certainly have a kind of fascination, but æsthetically we should class them with the childish productions of the topiarian art.

Tulips were well shown by Messrs. BARR, Mr. HARTLAND of Cork, and other exhibitors; but herbaceous and alpine plants were, to our thinking, not so well represented as on former occasions.

Altogether we may heartily congratulate the council on the success of their show, and tender our acknowledgments of the excellent management of Mr. WRIGHT and his assistants.

HÆMANTHUS MIRABILIS (see Supplementary Illustration).—M. LUCIEN LINDEN obligingly furnishes the following particulars relating to these fine plants which formed so striking a feature of the Temple Show. They were supplied by M. DUCHESNE, who discovered the plants in the Belgian Congo:—"Hæmanthus mirabilis (the magnificent plant shown in our Supplementary Illustration), is a charming plant, admirable in the elegance and luxuriance of its flowers. These plants grow under the constant shade of the great equatorial forest, and in small groups of four or five, in very light soil, composed of sand and vegetable debris. The temperature in these regions ranges from 15° to 20° C.; and a refreshing coolness reigns, which offers a contrast to the heat of the open land. Thus, it is certain that these plants would do well in a temperate-house, that perpetual shade is necessary to them, and that they should be grown in a light soil. During the dry season the plants are at rest; hence, after blooming, they should be encouraged to rest by giving them a diminished supply of water." We had the opportunity, when in Brussels last year, of seeing many of these fine plants, some of which, like that shown in our Supplementary plate, were exhibited at the Temple Show.

THE HÆMANTHUS—Upwards of forty species of this section of *Amaryllidæ* are known to science, and most of them have at one time or other been represented in gardens, and enjoyed a varying amount of attention and favour. For botanical purposes the genus has been divided into four, viz., *Nerissa*, *Gyaxis*, *Melchis*, and *Diacles*; but for garden purposes they may be roughly divided into two classes—the round bulbous class, sending up shining and rather ornamental leaves, represented by *Hæmanthus multiflorus*; and the species with compressed bulbs and fleshy leaves, lying more or less closely on a plane with the apex of the bulb, familiar examples being *H. albidus* and *H. coccineus*. Time was when *H. multiflorus*, with several

of its dense umbels of dark-red flowers formed telling features in show collections, and with this species, and the forms of it known as *H. Kalbreyeri* and *H. Manni*, introduced in 1877-78, there was a revival of the cultivation of these plants; but although there have always been a few amateurs of botanical tendencies who have eagerly acquired a few of all the species they could obtain, the *Hæmanthi*, beautiful as they are, can never be said to have come generally into cultivation. What was the reproach against them? Well, in modern times, with the invention of that descriptive title for plants which might be grown in large quantities—"decorative," their failure to be admitted into that guild of utilitarians, kept them as tolerated hangers-on in most gardens. *Hæmanthus Katherineæ*, a stately and showy species, introduced in 1877, made a good bid for public favour, and is so well liked that a batch of it is to be found in gardens here and there. In 1875, and for some years after, *H. albo-maculatus*, with its glossy lorate green leaves, spotted with white, and its dense heads of white flowers, was even sometimes seen in town-house decorations; but the first real grip on the decorative title was made by *Hæmanthus Lindenii*, introduced from the Congo, and illustrated in the *Gardeners' Chronicle*, April 22, 1893, which is ornamental in leaf and showy in flower, and which is being extensively grown. Following in the same direction are the fine new *Hæmanthus* exhibited by l'Horticole Coloniale, Parc Leopold, Brussels, and which show remarkable progress, both in habit and in the range of colour, the tints varying from pale pink to rose colour and reddish-scarlet, some of the leading types being mentioned in our report, and one, *H. mirabilis*, is figured in our Supplementary illustration. These new *Hæmanthus* require to be grown in a warm or intermediate-house, but when in bloom they may be used for indoor or conservatory decoration, and even benefited by the change. Those like *H. Katherineæ*, *H. cinnabarinus*, and others of the class, are more in the nature of evergreen plants than the South African species, and therefore do not require so long or so severe a rest. Generally speaking, the species of *Hæmanthus* indicate the treatment they require. When growing actively they require a sufficient supply of water, and when the leaves turn yellow and die off, a period of rest in some airy, sunny position, the longest rest being required by those with compressed bulbs. Most of the *Hæmanthus* grow well in a cold, airy greenhouse or conservatory.

ROYAL HORTICULTURAL SOCIETY.—Her Gracious Majesty Queen ALEXANDRA has consented to become Patroness of the Royal Horticultural Society in the place of Her late Majesty Queen VICTORIA.

GAMBOGE FRUITS.—Mr. GUTTERIDGE, the Curator of the Liverpool Botanic Gardens, obligingly sends fruits of the tree yielding the gum known as Gamboge. We do not remember to have seen them previously. They are globose, the size of a small Apple or *Diospyros kaki*, and of a yellow colour. We may allude to them on a future occasion.

TULIPA WILSONIANA (fig. 121, p. 327).—This is a handsome new species imported by M. VAN TUBERGEN, from whom we are promised further details later on. The flowers are a brilliant blood-red. It is dedicated to Mr. G. F. WILSON.

EXPERIMENTAL FRUIT CULTURE AT WYE COLLEGE, KENT.—The remainder of the new fruit-garden (4½ acres in all) has now been planted up; the manurial experiments have been extended, and a series of experiments begun upon such questions as stocks for Apples, preparation of ground for planting, pruning, &c. The cider Apples, grafts for which Mr. RADCLIFFE COOKE, M.P., was good enough to procure some time ago, have now grown into a useful size, and are formed into a plantation. The authorities would be pleased to send grafts of standard kinds like Fox Whelp,

Kingston Black, Broad-leaved Norman, White Bache, and others, to any fruit-growers in Kent or Surrey, who wish to start growing cider fruit; they have also a few standard trees to dispose of. An experiment to test the effect of manures upon Apple-trees was begun in large zinc pots in autumn, 1897, the Apple under experiment being Bismarck, planted as two year old trees. The manuring was repeated in 1899 and 1900; this year the same number of Apples was kept on each tree and weighed, with the following results:—

No.	Manuring.	Mean Weight per Apple.
1	Nothing	4 oz.
2	Complete Artificial Manure	4½ oz.
3	" with excess of Nitrogen	—
4	Nitrogen and Potash like 2, but no Phosphate...	4½ oz.
5	" " " but excess of Phosphate	7½ oz.
6	Nitrogen and Phosphate like 2, but no Potash	—
7	" " " excess of Potash	—
8	Complete Manure like 2, with Sulphate of Iron	4 oz.

The noticeable results were the heavy finely-coloured Apples upon 5, with excess of phosphate, the very high colour of the Apples on the unmanured tree, the want of any effect due to either the absence or excess of potash, and the fact that the iron salts had no effect on the colour of the Apples on tree 8.

KINGSTON-ON-THAMES FLOWER-GARDENS COMPETITION.—Instituted last year by the Mayor, Alderman MOATT, who generously furnished all the prize money and expenses, this competition is to be repeated this year, the present Mayor of Kingston, Ald. SALMON, having arranged the formation of a committee and headed the subscription list, which it is purposed to confine to the members of the Corporation, as the object is to make the competition a purely municipal one. Last year there were ninety entries in front-garden and window-decoration classes. This year the town will be divided into equal parts, and there will be classes for small and large gardens in each half, as also for window decoration. The schedule is about to be prepared for circulation, and it is anticipated that the entries will largely exceed those of last year. Councillor LYNE is Hon. Secretary.

THE REX BEGONIA HYBRIDS.—One of the reasons why our gardeners have almost ceased to grow the Rex Begonias, in spite of the handsome colouring of their leaves, is that they do not fulfil the severe requirements of a "decorative plant." So much the worse for the plant. Since, however, crosses have been raised from Begonias of greater stature, we may hope for a return of the foliage Begonia to public favour. We note in *Möller's Deutsche Gärtner-Zeitung* for May 18, six illustrations of these novelties which have been raised in considerable number by Herr SCHMEISS. The plants, judging from the figures and descriptions of those varieties given, and the descriptions of the remainder, are of a highly decorative character, of middle height, with deeply-slit leaves, which spring from sparingly-branched stems. One of the parents of these cross-bred Begonias is B. Rex diadema.

FLOWERS IN SEASON.—Mr. BAYLOR HARTLAND, of Ard Cairn Nurseries, Cork, sends us a large box of strongly-grown, brilliantly-coloured single Tulips, affording a further proof of the success attending the cultivation of bulbous flowers in Ireland. Mr. HARTLAND has some very charming varieties of most of the well-known species of Tulipa, and those he has now sent us are, without exception, of great value for planting in the flower garden, being essentially "decorative" Tulips. T. Gesneriana, as we might expect, is represented in a considerable number of forms, including Snowdon, a large globular flower, shading to pink; Othello, deep crimson coloured, having intense

black centre. "The Fawn," a variety so named on account of its peculiar and delicate colouring, which is buff in the centre of the segments, becoming paler towards the margins, and merging into very pale pink; it is an exceedingly attractive flower. Also lutea and lutea pallida, two good yellow varieties of different degrees of richness. "Firefly," reddish orange colour, with green and gold base; Ixioides, a bold, richly-coloured yellow Tulip with greenish-brown base; "Fairy Queen," and several other varieties remarkable for possessing white, blue, or "blue and white" bases to the flowers. In the last case the ground colour is white with a blue mark on each of the segments. Several varieties of T. spathulata (now merged with T. Gesneriana), are very pretty, including the type which grows about 30 inches high, and is bright crimson colour. T. s. aurantiaca striata, T. s. a. maculata, and T. s. "Bronze Queen," have all characteristics of their own, which are more or less described by their names. Tulipa vitellina, pale yellow passing to white, has a distinct perfume, which has been described as similar to that of Almonds; T. macrospila is brilliant scarlet with yellow and black zone, an excellent Tulip for creating effect in beds, and is described as possessing a perfume similar to that of Sweet Peas in the morning following rain. T. Didieri and T. d. alba are both elegant plants for the hardy flower border, rather than the beds. T. Billietiana "Sunset" is of very much more showy appearance, and Mr. HARTLAND'S curious description of it, "bright fiery red and gold; a lovely Turner-esque tinted blend," has some justification. T. elegans is represented by a variety called Picotee, the colour being white, with a thin line of bright pink round the margins; and T. e. pallida lutea "Laghorn Bonnet," a very tall-growing variety, having large yellow flowers of much substance. Other Tulips in this collection include Rose Pompon, with cream-coloured semi-double blooms; Shandon Bells, very large single flowers, opening yellow, but becoming magenta coloured; York and Lancaster, rose-coloured and white; and Bridesmaid, colour red, striped white.

Herbaceous Calceolarias.—Messrs. W. CLIBBON & SON, Altrincham, Cheshire, have sent us some flowers of the showy herbaceous Calceolarias, obtained from their seed plants. The bright weather has caused these flowers to wither a little during transit, consequently, we cannot see them in their natural size, but the richness of the self-coloured varieties, and those with spotted flowers is remarkable.

EXHIBITORS AT THE LATE PARIS EXHIBITION.—The *Revue Horticole* has an article detailing the number of foreigners who took part in the horticultural section of the Paris Exhibition. United States, 78; Austria, 60; Russia, 43; Germany, 39; Great Britain, 17 (almost all Canadian); Belgium, 10; Holland, 3; Spain, 2; Bulgaria, 2; Italy, Luxembourg, Monaco, Sweden, and Switzerland, 1 each. It is curious that the nearest neighbours to France were the least numerously represented.

EFFECTS OF LIGHTNING AND OF FROST ON THE VINE.—MM. L. RAYAZ and A. BONNET in the *Comptes Rendus* for March 25, publish a note of the effects of lightning naturally and artificially produced, and of frost, on the branching of Vines. They conclude: 1st, That the effects produced are identical; 2nd, that they are solely due to lightning; and, 3rd, that the effects of frost should be distinguished from the list of microbial diseases of the Vine, with which they have been confounded.

TUBEROUS-ROOTED PARSLEY is scarcely known in this country, but it is stated to be excellent, and to require the same cultivation as Parsnips.

WESTBURN PARK, ABERDEEN.—Possession has now been taken by the civic authorities of Aberdeen of the new Westburn Park, which is likely to become a popular resort. The park has an area of 34 acres, 22 of which are turf, and the remainder is treated as a garden. Mr. ROBERT

WALKER, Superintendent of the Victoria Park, has been entrusted with the care of the new park, and no better man could have been found to undertake the work.

BEET-SUGAR.—The general conclusions reached in a paper published in the *Journal of the South Eastern Agricultural College* at Wye, Kent, may be summarised as follows:—

1. In dry and warm seasons it is possible to grow crops of sugar-beet in England of average quality and more than average quantity on land suited to the cultivation of Mangolds.

2. If the sugar-beet has to be consumed as food for stock, pending the establishment of sugar factories, it is a less profitable crop than Mangolds.

3. The price a factory can afford to pay for sugar-beet depends *ceteris paribus* upon the price received for the sugar, which by the action of bounties and protective duties is artificially raised to the foreign manufacturer.

4. At the present price of sugar no factory could afford to pay for sugar-beet a price that would be remunerative to the farmer. A. D. Hall.

THE TROUBLES THAT AFFECT THE TEUTON.—Our acting Vice-Consul at Dares-Salaam sends a long report respecting the operations in German East Africa, and concerning the difficulties there encountered by the settlers. He writes that in three Coconut plantations with 300,000 Palms during the drought of 1898 hundreds of young trees died, but that the survivors and those subsequently planted are now thriving. Much trouble had been caused by the ravages of baboons in the nurseries, and by the unicorn beetle—of the latter, no fewer than 140,000 were killed on one estate in October, 1899.

THE CULTIVATION OF TEA IN NATAL.—Some ten years since we gave a few figures respecting the growth of Tea in Natal, supplied by the head of the Agricultural Department. At that time it was thought that a good market could be found in this country and at the Cape for all that could be spared after satisfying the needs of the proprietors of the Tea plantations. Progress has certainly been made, but not by leaps and bounds. The estimate for the supply of 1901 is 1½ million of pounds, or an increase over the production of last year of 250,000 lbs.

"PROGRESS OF BRITISH NEWSPAPERS IN THE NINETEENTH CENTURY."—As the title leads us to infer, this is an important-looking volume, and it is sent out under the auspices of the Swan Electric Engraving Company, Northumbria House, Charing Cross Road. It is illustrated to show the growth of various journals during their career, by representing side by side sheets of the original and of modern issues. Portraits of notable editors in the past or who are still working are also given, and the whole is interesting to general, and valuable to specialist readers. This record of "Progress" demonstrates clearly the differences between early and present-day journalism, and how the allowance of greater freedom of speech has caused an enormous increase in the size and number of newspapers, which by additional facilities for transmission also, are now addressed to the many rather than appreciated by the few. Nowadays, also, it is the many who rush into print rather than the select few with a message to deliver, who in earlier days won distinction on the staff of an influential publication.

ANOTHER OPEN SPACE FOR LONDON.—After some years of labour in the cause, Mr. LITTLE, Chairman of the Middlesex County Council, and his Committee, had the satisfaction, on Saturday, May 18, of seeing the well-known Alexandra Park and Palace thrown open to the public—the Duke of BEDFORD performing the opening ceremony. The area of the park is 175 acres, much of it well wooded, and it forms altogether a fine addition to the open spaces of the metropolis.

HOME CORRESPONDENCE.

PARENTAGE OF FOSTER'S SEEDLING AND LADY DOWNE'S SEEDLING GRAPES.—I was very much interested a short time ago in hearing from Mr. Douglas, the head gardener to Lord Downes at Baldersley Park, what I believe to be the true history of the origin of Lady Downe's and Foster's Seedling Grapes. I think it is generally understood that these two varieties were seedlings raised by Mr. Foster, the head gardener at Benningborough Hall, near York, from the Black Morocco, but from what Mr. Douglas told me, such cannot be the case. Although Mr. Foster had a share in the work, he evidently was not the true raiser. The following is Mr. Douglas' version:—Viscountess Downe, who was then living at what is now called Sessay Rectory, near Thirsk, sowed some seeds of a common Raisin in a flower-pot, which she placed in a window in her room. Two seeds germinated, which she sent to Mr. Foster to grow for her. When the Vines fruited, Mr. Foster asked Lady Downe what names should be given them, suggesting that one should be called Lady Downe's Seedling, to which she assented, choosing the black variety, at the same time remarking that the other should be called Foster's Seedling. These two Grapes still maintain a foremost position amongst the leading varieties of the day, both being most valuable in their seasons. Yet it seems curious that these, so distinct in colour, habit, and season (Foster's Seedling being amongst our earliest white varieties, and Lady Downe amongst the very latest black), should be raised from the same sowing of Raisin-seeds, and should have been the only two which germinated. *Alfred Gaut, Yorkshire College, Leeds.*

THE HARDY STATICES.—In speaking of the methods of propagating these plants, Mr. H. T. Martin, at p. 227, indicates that any of the species may be raised from seed, "or by division if care be exercised, for the roots are for the most part thick and fleshy." Evidently Mr. Martin attributes the difficulty of division to the fleshy roots alone. I take it, that in some species—*S. latifolia*, for example, admittedly the finest of all *Statice*—a great difficulty is the usually concentrated character of the root, and of the stock above the ground-level, as often enough what may appear to be three or four separate crowns above the ground, merge below the surface into an enlarged crown, almost defying successful division. Naturally, all plants, even of the same family, do not grow alike; still, *S. latifolia* is, perhaps, one of the least satisfactory of all the hardy species to increase by division. The matter is, however, made quite easy, in a way wholly unexpected, save to those who may chance to know it, for, as I have in past years stated in the *Gardeners' Chronicle*, not only the hardy, but equally so all the tender species of this genus (I refer to the perennial kinds more particularly), may be propagated readily by means of root-cuttings. Not only so, for these root-cuttings come on so freely and so well, and with the greatest certainty. It is the more valuable in the case of the *Statice*, because there are no outward indications of growth from the root, as in so many hardy plants. About twenty-five years ago, I used to experiment on various plants that would spring again from the root when grown under glass, and it was in 1875 that I first discovered that *Statice latifolia* could be rooted readily by this method while exhibiting no sign of its capabilities in this direction when left in the open ground. In that year I obtained several dozen plants from roots of one good ground specimen. In the matter of raising *Statice* from seed sown three months previously, only three or four plants appeared by midsummer, although the seed was good. In about three months I had from the root-cuttings a splendid batch of nice saleable plants. What surprised me most was, the large percentage that made growth, and the rapidity with which the young plants developed, many of the larger pieces giving several breaks at the apex, a circumstance that led me in subsequent experiments to divide the larger root pieces, i.e., those nearer the plants, into halves and quarters before inserting them. Had I now to raise stock of any of this group, I would without hesitation prefer root cuttings to seed or division. *E. H. Jenkins, Hampton Hill.*

CRATÆGUS PYRACANTHA VAR. LELANDI.—In reference to this plant recommended by me to be tried as a hedgerow plant (p. 116), your correspondent, 'H. J. Day' (p. 270), writing from

Orpington, Kent, takes pains to explain that this variety of *Cratægus* would not do as a hedgerow plant in the part of the country from which he writes, as there, he tells us, it grows merely as a bush about 4 feet high. This, to us of the more northerly counties, comes as a matter of surprise, as Kent is so constantly alluded to as being "the garden of England," from which I believe it is intended that we are to understand that every hardy plant, especially fruit trees, are to be seen in luxuriance in that favoured county. Yet, *mirabile dictu*, here is an unmistakably plainly-written confession that such coarse, strongly-rooting plant as *C. Lelandi* grows there only as a bush about 4 feet high. But even at that height, we are informed that the plant has a certain amount of saving grace about it, inasmuch as it produces fruit which are devoured quickly by the blackbirds and other berry-eating birds; that their beauteous effect are not allowed to remain to be seen and admired, as they are with us. And I think in this thickly-wooded county, and also closely subdivided agricultural land, with, in many instances, enormously overgrown hedgerows, impenetrable almost to the birds, we have as many blackbirds and thrushes, I venture to think, as can be found in any other county in England. If Kent is as naked as your correspondent seems to represent, then I do not wonder the birds, poor things! making short work with anything they can find in the fruit line. If my *C. Lelandi* fruits as well this year as it did last, I will endeavour to either bring or send a branch specimen of it to one of the Royal Horticultural Society's meetings. By-the-by, allow me to ask, was it anywhere near to the "Rocks of Orpington" where, about a week ago or thereabouts, and but for the timely rescue by Sir W. Threlton-Dyer, Dr. Masters, Mr. Sutton, and a few others, the Royal Horticultural Society's ship had almost become a total wreck? Luckily those good old and trusty pilots were aware of the rocks and shallows ahead, and the ship is again steered safe and comfortably into deep water. There let her ride, and wait for more auspicious breezes, which will come all in good time, and wait her safely into such a harbour of placidity and prosperity of which we shall all feel proud. *W. Miller, Berkswell.*

A FINE PLANT OF LYCASTE AROMATICA.—We have at present in bloom a piece of *Lycaete aromatica*, bearing eighty-five to ninety blossoms. We have not accommodation at present to cultivate Orchids largely, but would be pleased to show the *Lycaete* to anyone interested. *W. Barnes, Bearwood Gardens, Berks.*

THE OLD AURICULA.—In reply to the query of Mr. MacDonald, the chapter on Bear's-eares in 1597 edition of *Gerarde's Herball*, is practically the same with that in the edition of 1633. In the latter the second paragraph is additional; a short sentence is added to "6," as also to the "Names," and four sentences to "The Vertues." *B.*

CROCUSES AND SPARROWS.—I have read the correspondence in recent issues of the *Gardeners' Chronicle*, respecting the depredations of sparrows and mice amongst Crocuses, and should like to point out two certain means of preventing the nuisance. First, as regards mice, I have found that if the bulbs are placed in a tank of water, or thoroughly moistened, and then placed in a mixture of lime and fresh soot, it will, if allowed to become dry before planting, form a coating on the corms not easily removed, thus rendering them anything but palatable to the rodents. As to the sparrows, if a network of black cotton is placed on neat stakes round the plants, keeping the bottom strand not more than 2 inches above the level of the ground or turf, they will regard it as a trap, and leave them severely alone. My experience varies from that of Mr. Young, inasmuch as the mice used to make a clean sweep in particular situations, prior to the remedy mentioned being applied. Country gardeners have told me that with them sparrows only attack yellow flowered varieties. Our cockney sparrows are not so fastidious as their country cousins, and if left unprotected would in an incredibly short space of time demolish the lot. They also seem particularly fond of the young growths of Sweet Peas and Carnations. *W. H. Aggett, Bermondsey, S.E.*

RANUNCULUS LYALLI.—Two plants of this fine species, which when in flower is more like a Water-Lily than a Buttercup, are now blooming here. They are so good to look upon, with their mottled

stalks, large, leathery leaves, and snow-white flowers, centred by yellow stamens and green carpels, that I should like others to be able to enjoy them too. I therefore give the two treatments which have been successful. It would be unwise to draw any absolute deductions from these successes, which might mean failures elsewhere. There have been failures enough and to spare in the past; but the plant is so wholly noble and satisfying that it is worth while describing a road that has led to success in one place, if only as a guide to better treatment still. About three years ago I imported from Messrs. Adams, of Christchurch, N.Z., fifty plants. Messrs. Adams had had the order for a year, and had established the plants in pots. They were packed in a Wardian case, and forwarded when just starting into growth. Thirty-seven arrived alive. Many of these I gave away, others I lost in various experiments, eight now remain to me. Of these, two have been growing for three years undisturbed and without protection near the top of a so-called rockery consisting of a large mound of earth about 2½ feet high, surfaced with gravel chippings. The plants are exposed to the full fury of the N.W. wind, and are in consequence quite dwarf. One of these is flowering; both are very healthy. The other six have spent the last three years under a north hedge. They have been fenced round with Furze, so as to keep all winds from them. They have also had very little light. In winter they have had a 6-inch coating of dead leaves and cocoa-nut fibre. These plants have grown much taller than those on the rockery, and have developed much finer foliage. But they have been frightfully attacked by slugs; indeed, several of their brethren have died on the spot from this cause. So this spring, when the usual trouble was commencing, and leaves and shoots were being hacked and riddled, I had the six lifted and moved out to beds in the open, raised 4 inches above the ground level. The roots, which were good and strong, were spread out as much as possible horizontally, and large blocks of sandstone pressed down on them. The bed was then surfaced with gravel chippings, which is a specific I greatly believe in for most plant trees. In this position one of the six has at once put up a fine flower-spike, and all six look as happy as possible, and are quite free from slug attacks. *A. K. Bulley, Ness, Neston.*

SELF-SOWN TREES AND SHRUBS.—As it is possible that I may have omitted to thank in person some of the correspondents who were good enough to send me seeds of trees and shrubs ripened in England last year, I now take this opportunity of doing so. I may say that the germination of many, especially among the Coniferae, has been slow and irregular. As I am preparing a paper on the subject, which will be read before the Scottish Arboricultural Society next autumn, I shall be very grateful to any of your correspondents who will further oblige me by observations on the natural reproduction in woods, gardens, and shrubberies, of self-sown seedlings. It seems to depend principally on soil, climate, and protection, natural or artificial, and in this locality at least, *Mahonia aquifolium* seems to afford the best protection to self-sown seedlings. *H. J. Elwes, Cotesborne, Cheltenham.*

FLOWERS FOR BLACKEST LONDON.—Will you allow me to invite your readers to help us in an effort we are making to brighten this dreary and uninviting neighbourhood. We are just starting: what we call a Window Gardening Society, and, as our people are extremely fond of flowers, I anticipate for it a very useful future. Our difficulty is to get bulbs and seeds for distribution, and if any of your readers have such things at their disposal, I shall be glad to receive them on behalf of our people. When I tell you that flowers are practically unknown here, that we have only two or three very small trees in the whole of this district, and not a single grass-plot on which our children can play, you will understand that we are very bare and towney indeed. *Richard Free (Rev.), St. Cuthbert's, Millwall.*

A NEW RHUBARB, AND THE NECESSITY FOR A TRIAL-GROUND.—Messrs. Laxton & Sons placed before the Fruit Committee of the Royal Horticultural Society on the occasion of the meeting of Tuesday, April 23, several bundles of semi-forced stems of a seedling Rhubarb, intensely rich-coloured, of good size, and excellently flavoured.

That there was, as presented, considerable likeness on the part of this seedling and Daw's Champion as shown last year by Mr. W. Poupart, there could be no doubt. Still, it was impossible for the Committee to determine how far the varieties agreed when so presented; and as Daw's Champion is now, with a remarkable collection of Rhubarbs, growing at Chiswick, Messrs. Laxton were asked to send a root of their seedling there for trial as to divergence or otherwise. Now this may seem to be but a small matter, yet the same committee is constantly in the exercise of its judgment as a body of practical men, requesting that things of which it may be impossible to determine difference or otherwise, good or bad, at the Drill Hall, may be subjected to similar trial. It would be well for the Society, and for many awards, could a far larger number of things be thus tested before they

could, were they planted with the best Apples, be made far more productive and remunerative than they now are. Does not this old lament also serve to show how, in spite of all our business and mercantile as well as manufacturing capacities, yet in certain directions we are terribly slow to move. Certainly during the years that have elapsed since 1830, there has been in Great Britain a great development in fruit, and especially in Apple culture. Still, the development has been very far from keeping pace with the increase in population, as the Apple importations of 1830 were probably infinitesimal as compared with the importations of to-day. If since then France has largely fallen out of the ranks of Apple importers, both Canada and Australasia have become formidable competitors with the United States in Apple production. Whilst we are to be greatly blamed for our

near Dundee. I have now been informed that the Camperdown from which the note was sent is in Australia. *Iris tingitana* requires at least a Mediterranean sun and a warm climate to flower well. G. W. Dod.

FREESIAS.—The contention of "W. P." (see p. 230), that *Freesias* do better under cool culture than when subjected to heat, is well justified, plants grown in frames and cool-houses invariably exhibiting more vigorous health and greater floriferousness than those afforded a higher temperature. Where winter flowering is a necessity, heat is, naturally, indispensable; but the result will be inferior to that obtained where the plants are allowed to come naturally into bloom without artificial excitement of growth. The bulbs should be procured early in August, and potted at once in fairly rich, porous soil, the pots being placed in a cold frame in a sunny position, and covered with cocoa-nut fibre [or failing this substance, half-decayed leaves, Ed.]. In a fortnight or so, the shoots should have pierced the soil, when the fibre surfacing the pots must be removed, allowing that in the interstices between the pots to remain. In this frame they may be left through the winter, giving air when the weather is fine, and covering the frame on frosty nights. Many appear to think that the *Freesia* in its native habitat grows in a hot-house temperature; but this is by no means the case, the nights being generally cool, and in low-lying spots near water, the thermometer at about 2 o'clock in the morning often shows a reading not far above freezing-point, and this at a time of the year when these bulbs are in flower. When the flower-spikes can be felt in the sheath, the pots may be brought into the greenhouse and given periodical waterings of weak liquid-manure until the scapes are expanding their blooms. Treated in this manner, the foliage will be of a dark tint, and rigid, and the flower-stalks strong and wiry, bearing many scapes, some of which will carry from eight to ten blossoms, that should be at their best towards the end of March. Plants such as I describe are far superior to any I have seen wild at the Cape. Supports are sometimes necessary, but these should be inconspicuous, since nothing detracts so much from the appearance of the flowers as sticks that obtrude themselves upon the sight. Galvanised wire, painted green, will be found to answer the purpose admirably, being indistinguishable from the foliage. "W. P." gives good advice in deprecating the sudden drying-off of the plants immediately the flowers are withered. Watering should be continued until the leaves begin to assume a yellow tint, when it should be withheld, and the pots placed in the sunniest and hottest position available, so that the bulbs may have a thorough roasting, for in this lies the secret of subsequent success. Where the pots are placed under the stage after the flowers are over, and so are kept shaded through the summer, the bulbs do not ripen properly, and rarely flower satisfactorily the ensuing season. In the south-west *Freesias* are often grown with success in the open, in company with *Ixias*, *Sparaxis*, and other Cape bulbs; and I have had some excellent scapes on outdoor plants. *Ixias* and *Sparaxis* may be left in the ground permanently, but with *Freesias* I have found better results obtainable by lifting and drying the bulbs under glass after the foliage has died down than by allowing them to remain undisturbed to be drenched by summer rains. S. W. F.

SHADING FOR ORCHID-HOUSES.—A very economical method of shading the roofs of glasshouses came under my notice the other day, when looking through Messrs. Ashton, Stanley & Co.'s Orchid Nurseries at Southgate, which impressed me as being of such practical value that I thought it worth recording in the pages of your valuable journal. The cool Orchid-houses here are span-roofed, and built in pairs, so that in an ordinary way blinds would be required for all four sides of the roofs. But this was obviated in the following manner by Mr. Ashton. Spars, strong enough to carry the weight of the blinds, were fixed transversely from ridge to ridge at certain distances apart throughout the total length of the houses. On these spars the blinds are worked from the ridge of the one house to that of the other, just as shade is or is not required; and thus the necessity for having two sets of blinds, one for either side of the roofs where they meet in the valley or gutter between the two houses, is done away with. But this is not all, for not only do the inmates receive the requisite



FIG. 124.—MUSA RUBRA.

Exhibited at the Temple Show by M. Truffaut. Leaves dark red colour.

were finally honoured. But the fact referred to helps to show how important to the Society's operations is a garden, and it is because there seems to be a growing feeling amongst the Fellows that a garden may be entirely dispensed with, that is, indeed, the outcome of much that has recently been said and written. It seems needful to remind Fellows than some of the most useful and valuable work accomplished by the Society and its Committees is done through the agency of a garden. It will be well to remember that if no garden precedes the end of Chiswick, none other may follow. A. D.

IMPORTED APPLES.—So far ago as 1830, a writer on fruit culture in this country lamented the large importation of Apples. He wrote:—"The great quantities of Apples imported from France and America is certainly a national loss, more especially as there is so much vacant British ground well calculated for the growth of the Apple now lying waste." It is therefore but the repetition of an old cry now to lament the importation of fruit in such enormous quantities as is seen, and still with thousands of acres of good land that

neglect of home production, we cannot deplore the importations of vast quantities of Apples from our distant colonies, as the senders in return become customers for our own productions, and our teeming population has Apples in great abundance to consume. There is every reason to hope that with improved habits of life the demand for Apples will yet increase enormously. If we fail to grapple with that demand, some one else will supply it. A.

IN WHAT COUNTY?—This heading is written in hope of attracting the notice of correspondents who send to the gardening papers what might be very interesting notes on flowers if we only knew to what part of the kingdom or of the world they referred. As an example, some weeks ago a note appeared in a contemporary journal headed "*Iris tingitana*;" the writer said that he had read it was difficult to make it flower, but that he found no difficulty at all with it planted in gravel with several inches of good loam over it. In fact, he wondered any garden was without it. This note was only dated "Camperdown." I searched in vain in Bradshaws, Post-office Directories, Atlas-Indices, but could find no Camperdown except one

amount of shade, but the houses can be kept much cooler in consequence of the volume of air that is continually passing through beneath the blinds from end to end of the valley. Mr. Ashton assured me that on many occasions last summer he found the air delightfully cool in this particular instance on walking along the gutter, and speaks of the method in the highest terms. The blinds used are the "wood-lattice" or "lath-blinds." It is a matter for surprise that they are not more often used in private gardens, seeing that they are so much more durable, if rather more costly at the outset. The above method of shading might with advantage be adopted in many instances where the same class of plant is cultivated in both houses, i.e., when they are constructed on the above-named principle, and which, besides being more economical, would also save much labour. A. W.

FLORISTS' FLOWERS.

CURIOUS FORMS OF THE POLYANTHUS AND PRIMROSE.

THOSE of us who are in the habit of raising seedling Primroses and Polyanthus are aware of the tendency of both to run off into abnormal forms, and, as far as my own experience goes, the Polyanthus produces a larger number than the single-stemmed type. I sometimes, when I am in the country, find curious forms in old cottage gardens, and, judging from the size of the clumps, some of them have been there for years; and in villages I have found the same type in several gardens, as if there had been something like local distribution, which would be natural in a village community.

With the Hose-in-Hose form most of us are familiar; in this case the calyx loses its normal green colour, and becomes a second corolla, and almost invariably of the same type. I find the Hose-in-Hose form more common in the white and yellow Oxlips than in the coloured varieties, and some of them are large, and very handsome. As a rule, they produce seeds sparingly, and if they be closely examined, it will be generally found that the seed vessels are smaller in size and rounder than those on the plants of the normal type; while a capsule contains much fewer seeds. Nor can anyone depend upon the Hose-in-Hose character being reproduced from seeds; some may, and do, come true to the parental character, but the percentage is never large. Therefore if anyone has a fine variety of the Hose-in-Hose character, he should seek to perpetuate it by division of the roots. Even if 25 per cent. of the seedlings from any particular colour of Hose-in-Hose character came with the second corolla, the progeny will in most cases, if not in all, show variations in colour.

The Hose-in-Hose form appears occasionally in the coloured Primrose, but not so frequently as among the Polyanthuses. Has the Hose-in-Hose form of the common Primrose been found in a wild state? I have sometimes gone into woods at the flowering time, where they abound, and looked for abnormal forms, but could not succeed in finding any. Perhaps the search was not close enough. Nor have I ever heard, to my knowledge, of the Hose-in-Hose form in the common yellow Primrose; but it may exist. One can see thrum-eyes and pin-eyes; the blossoms vary a little in tint, but more in rotundity and substance; and I think a great deal could be done in the way of improving the size and substance of the common type, if anyone would take the trouble to lead it on from stage to stage.

Jackanapes, or Jack-in-the-Green, is pretty well known. In this case the calyx enlarges almost to the size of the corolla, but remains green. This is a not uncommon occurrence, but these plants also produce seeds very sparingly. Very rarely do I notice this peculiarity among the coloured Primroses; but when it does happen it is almost invariably that a strong Polyanthus stem follows. I have lying before me as I write a Polyanthus head of bloom, the flowers on which are on quite long foot-stalks. Another form has developed a number of leaves

with the flowers at the point where the umbel springs from the scape, which is, in my experience, unusual.

When the calyx becomes partly coloured and partly green, and especially when some of the segments elongate, it is then known as the Pantaloon. The forms vary a good deal, and while all are singular, some are decidedly attractive. I have never yet, to my knowledge, found the Pantaloon form among the coloured Primroses. I may here state I do not include the forms known as Polyanthus-Primrose—types which throw up blossoms of the acaulis type first, and of the elatior type after.

A still further development of the abnormal character is found in the Galligaskin: in this case the segments of the corolla, sometimes wholly green, and sometimes partly green and partly coloured, assume the form of sword-blades, and become considerably elongated. This is by no means so common as the Jackanapes or the Pantaloon, but it is both curious and interesting.

The tendency to become double—by no means common—I have found more frequent in what is known as the gold-laced section of Polyanthuses. There are probably four or five (perhaps more) double forms of the Polyanthus in cultivation; but, like the double Primroses, they do not produce seeds, and can be increased only by division of the root, which is, at best, but a slow process. Very rarely, indeed, so far as my own experience goes, does the double character reveal itself among the improved Oxlips or Giant Polyanthuses. Out of Mr. G. F. Wilson's blue Primroses has come a very fine type of blue Polyanthus, some grand forms of which were exhibited by Messrs. J. Pope & Son, florists, of Birmingham, at the Midland Daffodil show last year. It has remained for *Primula acaulis* to develop much truer shades of blue, as well as a more varied character, than *P. sinensis*, and it has also left *P. auricula* far behind in this respect. If the single blue Primrose would develop a double blue form as large and double as the old velvety-crimson *Madame de Pompadour*, it would be rapturously hailed by all admirers of the showy double Primroses. R. Dean.

ARTIFICIAL POLLINATION OF CARNATIONS.

An account is given in *Gartenflora* of cross pollinating *Dianthus chinensis* with the pollen of *D. Caryophyllus*, for the purpose of combining the vigorous growing habit and strong stems of the first, with the rich colour and odour of the latter. Incidentally pollen from *D. barbatus* and *D. plumarius* was also used to fertilise the Chinese Carnation. The pollen of *D. barbatus* was effective, and seventy good seeds were obtained; but that of *D. plumarius* exerted no influence whatever. Some 100 seeds were obtained when *D. chinensis* was pollinated by *D. Caryophyllus*. These were sown. None of the resulting Carnations was alike in type, form, or leaf formation. Out of sixty blossoms, only three were well filled. Ten of the more promising plants were set in pots, pollinated with *D. Caryophyllus*, and the seed harvested in the autumn. This seed, when sown the following spring, produced plants which blossomed at intervals between June 1 and September 30. Selected plants were again pollinated with *D. Caryophyllus*, and the operation repeated three times. The result of the experiment at the end of six years is a plant which blossoms earlier than *D. Caryophyllus*, and has a stronger stem. It is believed that after a few years this strain can be so fixed as to come true to seed. The experiment is further believed to show that it requires at least ten years before satisfactory results can be obtained in cross pollinating Carnations. *American Florist*.

PLANT PORTRAITS.

ANEMONE BLANDA (by oversight for A. MEMOROSA VAR. ROBSONIANA).—*Revue Horticole*, April 16.

ASARUM CANADENSE.—"Wild Ginger of the United States." *Mechanics' Monthly*, April.

CEROPEGIA WOODII, Schlechter.—*Garten Flora*, May, t. 1456. See *Gardeners' Chronicle*, 1897, ii, 331, fig. 104.

SOCIETIES.

(Temple Show continued from p. 4 of supplement.)

CUT FLOWERS—continued.

TULIPS.

A very meritorious and showy collection came from Mr. H. J. JONES, Ryecroft Nursery, Lewisham, who had of the May-flowering group *Picotee*, *Gala Beauty*, crimson, flaked with gold, a striking variety; *Fulgens*, *Fulgens lutea*, *Flava*, *Bellefiana* and *B. Sunset*, *Narbonensis alba*, *Didieri lutescens*, *D. alba*, *Parisian Yellow*, *Isabella*, *Retroflexa*, and *Fairy Queen*. The following were the finest among the Darwins: *Wilhelmina*, *The Sultan*, *Flambeau*, *Salmon King*, *King of the Reds*, *Loveliness*, *Joe Chamberlain*, *La Conquerante*, and *Don Frederico*. Late Daffodils and some Spanish Iris were also included.

Messrs. PAUL & SON, Old Nurseries, Cheshunt, had a small and select collection of Tulips, consisting of the May-bloomers, such as *Isabella*, *Gala Beauty*, *Gesneriana*, *Bouton d'Or*, *Velutina*, *Picotee*, *Golden Beauty*, &c.; and with them bunches of *Heuchera hybrida*, and bunches of various shrubs, such as *Exochorda Alberti*, *Cytisus*, a collection of *Lilacs*, &c.

Messrs. B. S. WILLIAMS & SON, Victoria Nurseries, Holloway, had bold bunches of such late Tulips as *Picotee*, *Golden Beauty*, *Bouton d'Or*, *Sunset*, *Glow*, *Striped Crown*, very handsome; *Gold Crown*, and various Darwin and Parrot varieties. Of the latter, *Brilliant* is an attractive one. There were *Lilies*, *Gladiolus*, *Spanish Iris*, and *Ixias*, *I. crateroides* being very showy.

Mr. R. C. NOTCUTT, nurseryman, Woodbridge, also had Tulips; he staged *Bouton d'Or*, *Golden Crown*, a handsome rose-coloured form of *I. Gesneriana*; several Darwin types, &c.

Messrs. T. S. WARE, Ltd., nurserymen, Feltham, had a small collection of Tulips, English and Darwin—good flowers, but much crowded.

PANSIES AND VIOLAS.—Messrs. DOBBIE & CO., nurserymen, Rothesay, had some very fine fancy Pansies, brilliantly coloured, viz., Mrs. K. Stewart, D. G. McKay, W. H. Clark, Miss Neil, John Arrol, John Myles, Colin Pye, Geo. Stuart, D. Roberts, and Col. Buchanan; together with a good representation of the old-fashioned English show varieties, which were not named.

Mr. W. SYDENHAM, nurseryman, Tamworth, staged a large and varied collection of fancy Pansies and Violas. Chief among the former were Miss Dodds, Miss Tomlinson, Lord Salisbury, Fred. Male, Neil McKay, R. C. Allen, Pole Carew, &c.; and such Violas as Mrs. W. Sydenham, Leda, Isolde, Sea Gull, Rubens, Winsome, Hornet, &c.

Messrs. SUTTON showed fine white self, yellow, and variously coloured Pansies from the open ground.

SWEET PEAS.

These have now become a feature at the Temple Show, and the collections staged on this occasion showed that the flower can be had in bloom in May with but little sacrifice of quality. Messrs. DOBBIE & CO., Rothesay, had the largest collection set up in bold bunches; including such varieties as *Mars*, *Modesty*, *Lady Mary Currie*, *Sadie Burpee*, *Othello*, *Aurora*, *Lady Grisel Hamilton*, *Golden Gleam*, *Grey Friar*, *Her Majesty*, *Mrs. Dugdale*, *Prince Edward of York*, *Ramona*, *Triumph*, *Captain of the Blues*, *Princess of Wales*, &c.

Messrs. JONES BROS., nurserymen, Shrewsbury, also had a choice collection, which comprised *Lady Mary Currie*, *Baden Powell*, *Lovely*, *Lady G. Hamilton*, *Lottie Hutchins*, *Triumph*, *Aurora*, *Salopian*, *Princess of Wales*, *Mabel Jones*, *Black Knight*, *Venus*, *Novelty*, of a deep rose-pink tint, very pleasing, &c.

Mr. ROBERT SYDENHAM, Tenby Street, Birmingham, had ten varieties in duplicate, and made a very pretty display of the varieties *Her Majesty*, *Salopian*, *Lady Grisel Hamilton*, *Blanche Ferry*, *Prima Donna*, *Lovely*, &c.

EXHIBITS OUT OF DOORS.

There have always been shown collections of hardy and half-hardy plants in beds, and in various positions out of doors, but on this occasion a greater area than ever was utilised for this purpose.

By far the largest exhibit was one of hardy foliage trees and shrubs, shown by Messrs. FISHER, SON & SIBBAY, Handsworth Nurseries, Sheffield, whose plants covered a space of about 100 feet by 15 feet. In addition to these hardy shrubs there were some fine *Dracenas* in tubs, *D. Doucetti*, 8 feet high, *D. Veitchi variegata*, 6 feet; *D. australasica*, with broad green leaves, having a red stripe along the middle upon the outside, 4 feet high; also *Aralia pulchra*, a very handsome species. The exhibit was very rich in species and varieties of *Acer*, and certain varieties of the Japanese section were shown in half circular groups, in some quantity. *A. reticulatum*, white, with green veins; *A. japonicum*, *crataegifolium*; *A. rubrifolium* magnificent, deep

crimson-red; *A. sanguineum*, bright red leaves, very small; *A. dissectum*; *A. japonicum aureum*, and others. There were also *A. Leopoldisuperbum*, *A. Woorleyi*, *A. pulchrum*, and other larger growing species. *Cytisus Handsworthensis*, bearing white bloom, is quite new, and happened as a chance seedling. A new Ivy *Hedera arborea amurensis* has bold leaves, and is handsome. Golden Oaks were shown in considerable variety, including *Q. corcordia*, *Q. pedunculata argentea*; *Vitis Coignetie*, the spiny but graceful *Rubus australis*, *Picea pungens glauca pendula*, a few hardy "Mollis" *Rhododendrons*, *Eleagnus japonicus medio-pictus*, a very pretty shrub; a fine Elm, *Ulmus argentea*, *Wigelias*, *Lilacs*, *Magnolias*, &c., were some of the plants shown.

Messrs. J. CHEAL & SONS, Lowfield Nurseries, Crawley, exhibited a group of hardy ornamental flowering shrubs, including a fine lot of *Lilacs*, *Rhododendrons*, Japanese Maples, *Laburnums*, *Weigela Van Houtte*, &c. Also a group of clipped trees.

Japanese Maples were shown by Messrs. W. FROMOV

Street, London, S.W., had a very curious exhibit of model Japanese and Chinese gardens. These miniature gardens, though not very commendable from our point of view, represented in a fairly good manner the style of Eastern garden architecture. Messrs. BARR & SONS, King Street, Covent Garden, London, had also a large group of pigmy trees, dwarfed and "badgered" to a wonderful degree.

Mr. PAUL ERSELIUS, Church Lane Nurseries, Romford, had a group of a double white *Petunia*, named *Charlotte*, planted in a bed, where it looked very pretty.

Bamboos were shown by Messrs. JAS. VEITCH & SONS, King's Road, Chelsea; and V. N. GAUNTLETT & CO., Japanese Nurseries, Redruth. Messrs. VEITCH's exhibit consisted of fine plants in pots, which represented some of the more useful varieties for cultivation in the open. Messrs. GAUNTLETT & CO. brought out growths from their nursery, which showed how very successfully the Bamboos grow at Redruth. Some were 10 or 12 feet high, including *Phyllostachys nigra*, and *P. n. punctata*, *Arundinaria nitida*, and many others.

pale tinted, with fimbriated margins; Mountain Pæonies, *Polyantha* Roses, Japanese Acers, *Cytisus purpureus*, *Syringas*, *Olearia stellata*, *Viburnum macrocephalum*, *V. plicatum*, *Ceanothus Veitchianus*, &c.

This firm showed a great number of plants of *Kalanchoe flammea*, each furnished with a branched corymb of orange-red flowers, the height of the entire plant, together with the inflorescence, being 2½ feet. The plant is a native of Soma Island, and was figured recently in the *Gardeners' Chronicle*.

Mr. JNO. RUSSELL, Richmond Nurseries, Surrey, showed a group of miscellaneous flowering and foliage plants, including hardy *Rhododendrons* (*Azaleas*), *Lilacs*, *Genista præcox tinctoria* fl. pl., with dense double flowers at the extremity of the shoots; *Genista prostrata* as standards with growths a few inches long pendent and embracing the stem, rather stiff in appearance, colour of flowers rich yellow; *Cytisus scoparius Andreanus*, *Ceanothus*, choice variegated Ivies Japanese Acers, *Vitis*, *Aralia Maximowiczii*, *Sambucus racemosus* with yellow leaves, the golden Elder, *Hydrangeas*, &c.

Mr. H. B. MAY, Dyson's Road Nursery, Upper Edmonton had a group of plants, including the pretty striped *Clematis Nellie Moser* and *Marcel Moser*, some fine double and single flowered zonal *Pelargoniums*, *Codienms*, *Cycas*, *Palma Coleus*, Ferns, including a beautiful and very large specimen of *Polypodium Mayii*, which we figured in a supplement May 28, 1898, when shown at the Temple show of that year.

Messrs. H. CANNELL & SON's pyramidalis strain of *Myosotis* was represented by a group of capital plants in pots, including the varieties *Pink Gem*, *Blue Gem*, and *White Gem*. They grow about 7 inches high, and flower abundantly, being a very true strain.

Mr. K. DROST, Richmond, exhibited a group of *Liliums* (*L. longiflorum*) just as they are grown for market.

Calla Pride of the Congo was shown in a small group by Mr. S. BIDE, Alma Nursery, Farnham. It was a dwarf-growing variety, with lemon-coloured spathes having a dark blotch at the base. The foliage is spotted white.

Schizanthus "Wisetonensis" which Messrs. Low & Co. Bush Hill Park Nurseries, showed so well last year, and which we illustrated on that occasion, was again displayed by the same firm in a very attractive group of plants. The variety in habit and colour is a very pleasing one.

Mr. JANNOCHE, of Dersingham, Sandringham, made one of his famous exhibits of *Lily of the Valley*, the growths and flowers being of remarkable strength. Mr. JANNOCHE had also some varieties of *Lilac*.

Mr. H. J. ELWES showed an interesting little group consisting of the showy orange-coloured *Bomarea Caldasiana* *Cypripedium guttatum*, like a miniature *C. spectabile*, and *Alstromeria peregrina alba*, with greenish-white flowers.

Cinerarias were shown by Messrs. SUTTON & SONS, Reading, and Messrs. J. CARTER & CO., High Holborn; in each case the strain was that known as "stellata." There were large groups from each firm, and both strains are highly decorative, that from Messrs. SUTTON's being especially "stellate." The colours in either strain are very delicate ones.

Mr. W. ICETON, Granard Nursery, Putney Park Lane, exhibited a group of fine-foliage plants, as *Palms*, *Codiaeum*, *Cordylines*; also a batch of *Lilium longiflorum*.

Messrs. SUTTON & SONS, Reading, exhibited in one of the tents a group of their pretty bedding annual, *Nemesia strumosa*, in batches, according to colour. There were crimson flowered, rich orange-coloured, pale yellow, and rose coloured strains, all of which were very showy. Out-of-doors, another group of these plants was shown, in which the various colours were mixed, the general effect being very good.

Lantana hybrida was capitally shown by Messrs. WATKINS & SIMPSON, Tavistock Street, Covent Garden, W.C. There were deep red, rose, scarlet, and yellow-coloured varieties, and the dwarf, freely-bloomed plants recommended themselves for bedding purposes, though the ladies seemed to hold very opposite opinions as to agreeableness or otherwise of their perfume. The same firm exhibited *Nasturtium Queen of the Tom Thumbs*; it has variegated foliage, and deep crimson-coloured flowers, and is said to come true to type to the extent of 85 to 90 per cent.

Messrs. W. R. NEWPORT & CO., Hillingdon Heath, Uxbridge, exhibited a group of bedding *Lobelias*, the variety being *Newport's Model*; flowers purple with white centre.

Mrs. HART, Fairlawn, Tottenham, Kerts, showed some pigmy trees, trained in a variety of shapes, the Larches apparently being especially amenable to such "culture." Some of these represented Chinese and Japanese Junks, also storks.

Messrs. STORRIE & STORRIE, of Dundee, had a group of yellow *Auriculas* and border forms in pots, also *Polyanthuses* in pots in great variety, yellow being very prominent, and they had large quantities of cut flowers set up in clusters or mounds very effectively.



FIG. 125.—IRIS FLAVISSIMA. (SEE P. 326.)

& SONS, Chiswick, and Messrs. THOS. CRIPPS & SON, Tunbridge Wells. In the exhibit of the firm first named, there was endless variety represented, the plants being medium-sized, well-grown specimens. Messrs. CRIPPS' group included fewer varieties, but some of the plants were magnificent specimens, 3 or 4 feet high, and as much through. These graceful plants make very interesting groups, and the two firms just mentioned always exhibit them well.

Messrs. JAS. CARTER & CO., High Holborn, London, well-known to be importers of *Davallia* roots, which are worked up into all sorts of queer forms, and then introduced to heat, and encouraged to make growth, had a very extraordinary exhibit. The leading device for these Hares-foot Ferns on this occasion was that of an elephant; there were two of these about the size of a donkey, the imitation being very good. The tusks and eyes were the only "make up" the Ferns were afforded. They had several pigmy trees and other such exhibits upon a mirror simulating water.

Messrs. W. CUTBUSH & SONS, Highgate Nurseries, London, are determined to maintain their reputation for clipping the greater number of trees, and having the most unheard-of caricatures. On this occasion their exhibit must have included some sixty or seventy specimens.

Mr. JOHN RUSSELL, Richmond Nurseries, Surrey, had a group of clipped and pigmy trees; and Mr. S. EIDA, 5, Conduit

Messrs. R. SMITH & CO., St. John's Nurseries, Worcester, showed a group of ornamental trees and shrubs, including some useful flowering and fine foliage species.

Mr. JOHN RUSSELL, Richmond, had another such group, in which there were more Japanese Acers and flowering plants.

Messrs. JOHN WATERER & CO., LTD., Bagshot Nurseries, Surrey, exhibited a group of their choice varieties of *Rhododendrons* in full bloom, most of which were remarkable for being heavily blotched. Also a group of hardy foliage trees and shrubs, including some of the more decorative Conifers, Golden Hollies, *Ledum palustre* in flower, *Rhododendron molle* Anthony Koster, &c.

MISCELLANEOUS.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea, made a very imposing group of hardy flowering plants in the Orchid-tent. Some choice varieties of hardy *Rhododendrons* (*Azaleas*) were noted, including such as *Anthony Koster*, *Doncaster*, &c.; also of double varieties (*Pontica* or *Rustica*), the other section of hardy *Rhododendrons*, was represented with very hearty blotched showy varieties, such as *Sigismund Rucker*, crimson, with deep brown blotch; *Marchioness of Lansdowne*, pale red, with heavy blotch; also *Wistaria sinensis*, and the variety *alba*; *Hydrangea Hortensia Mariessii*, *H. stellata* fimbriata, white or

Awards of Merit.

Androsace Chambyiensis.—A charming addition to the really good alpine Androsaces. The present plant is a hybrid between *A. villosa* and *sarmentosa*, but as a good garden plant it is infinitely superior to either, possessing all the freedom of growth of *A. sarmentosa* and its simplicity of culture, but in some degree the more compact mass of *A. villosa* is seen in the abundant flowering. The flowers are of rich rose-pink, quite self-coloured, the eye being very small. The plant was shown by MESSRS. VEITCH of Exeter, and the Guildford Hardy Plant Co.

Lithospermum canescens.—This is perhaps the most distinct of all this family, the erect habit being surmounted with flowers of a golden yellow, from Mr. A. PERRY, Winchmore Hill.

Leucocorynium montanum.—An exquisite alpine bulbous plant, belonging to Liliaceae, with miniature white flowers emerging from the tufts of narrow, almost linear, leafage. A nicely flowered example of this rarely-seen plant, which is a native of California, was shown by Mr. AMES PERRY, Winchmore Hill.

Begonia Mr. Henry Clark.—A first-class double-flowered variety; colour intense scarlet. From Mr. T. S. WARE, Ltd.

Begonia Mrs. W. G. Valentine.—A double-flowered, tuberous-rooted variety; colour creamy-white. From Mr. T. S. WARE, Ltd.

Begonia Queen Alexandra.—A double flowered variety, of very pleasing appearance; colour white, heavily edged with rose. From Mr. T. S. WARE, Ltd.

Carnation Sir Hector McDonald (W. CUTBUSH & SONS).—A tree-variety with five white flowers, striped red.

Hippeastrum Lois.—A very large flower, of good form; white, veined deeply with bright scarlet. From Captain HOLFORD, Westonbirt.

Rose Soleil d'Or.—A variety with H.P. characteristics, obtained from a cross between Persian Yellow and Antoine Ducher. It has double flowers, 4 inches across, of very deep apricot colour, with a very little flush of pink; quite distinct from any of which we have knowledge. The foliage is like that of Persian Yellow. From Messrs. W. PAUL & SON, Waltham Cross.

Rose Leuchtstern.—A polyantha variety with single flowers, about 2 inches across; colour white, with deep pink margin. From Messrs. W. PAUL & SON, Waltham Cross.

Swainsonia McCullochiana.—An Australian species, with large reddish-brown flowers, pure white eye, surrounded with very dark brown or chocolate colour. From Messrs. HUGH LOW & CO.

Peony Christine Kelway (KELWAY).—A large double white variety of stout, well-formed petals, and extremely attractive, a valuable addition.

Tulip Annie McGregor (BARR & SONS).—A beautiful English Rose breeder, with a pure white base, lovely in the self form.

Tulip Dr. Hardy (BARR & SONS).—In its broken form a well known flamed bizarre, richly marked with a reddish dark feather and flame.

Tulip La Tulip Noire (HOGG & ROBERTSON).—Deep velvety black, large flowers.

Tulip Van Poortvliet (BARR & SONS).—Glowing salmon-rose, with blue centre.

Tulipa Meoriana (WALLACE).—A bold and striking rosy-scarlet self.

Tulipa Isioides (HOGG & ROBERTSON, and Mr. B. HARTLAND).—Creamy yellow, with a dense dark base, a novel and attractive form.

Tulipa Dalmati Sunrise (HOGG & ROBERTSON).—Scarlet and rosy buff on the interior, flushed with yellow, and rosy buff on the margins.

Fruit and Vegetable Committee.

Present.—Geo. Bunyard, Esq. (Chairman); and Messrs. C. Herrin, W. Crump, Geo. Reynolds, F. Q. Lane, W. Poupert, W. Bates, J. Jacques, Jas. Smith, W. Farr, Jos. Cheal, Thos. Coomber, R. Parker, H. Eslings, M. G. Gleeson, J. Willard, A. Ward, G. Kelf, S. Mortimer, H. Balderson, P. C. M. Veitch H. Somers Rivers, A. H. Pearson, Geo. Woodward, John Basham, G. T. Miles, Geo. Wythes, H. Markham, W. Pope, W. Fyfe, and A. Dean.

FRUIT.

Some excellent representative collections of both early forced fruits and well-kept collections of Apples were staged by several exhibitors, and of the former special mention may be made of the large exhibit set up by Mr. Fyfe, gr. to the Right Hon. Lord WANTAGE, V.C., K.C.B., Lockinge Park, Wantage; and Mr. McIndoe, gr. to Sir J. W. PEASE, M.P., Hutton Hall, Guisborough.

Messrs. G. BUNYARD & Co., Maidstone, and Mr. WATKINS, Pomona Farm Nurseries, Hereford, staged large collections of Apples, showing what may be accomplished in the way of preservation of British-grown fruit.

The fine collection of forced fruits above mentioned, from Lord WANTAGE, comprised thirty-six dishes, all of excellent quality, which reflected much credit on his able gardener, Mr. Fyfe. The dishes comprised very fine Madresfield Court, Black Hamburg, Buckland Sweetwater, Foster's Seedling, and Lady Downe's Grapes, the latter in an exceedingly good state of preservation for Grapes of last season's growth, while the bunches and berries of Madresfield Court were perfect in form and colour. Lord Napier Nectarine (three dishes), were large in size and of good colour; Hero of Lockinge Melon was represented by seven good fruits; Brown Turkey Figs, Strawberry Royal Sovereign (three dishes), very fine; the tropical *Monstera deliciosa*, Frogmore Early Bigarreau, and May Duke Cherries, Stirling Castle Peaches, and four dishes of well-kept Apples. All the fruits (excepting four stands of Grapes) were set up on plates standing in raised wire stands, and relieved with trails of Asparagus Sprengeri and Currant-fruited Tomatoes, the stands of Grapes forming a nice background. If any fault could be found it was in the rather too even slope of the dishes from front to back; a little more irregularity would probably have given greater effect.

Sir J. W. PEASE, Bart., M.P. (gr., Mr. McIndoe), staged twenty-four dishes, including three bunches of very fine Black Hamburg Grapes, and the same number of Early Summer Frontignan; ten Melons, comprising the varieties Yorkshire Beauty, Magnum Bonum, Hutton Hall, Champion, and Monarch; Early Rivers' Nectarine, and Dr. Hogg and Grosse Mignonne Peaches, Black Tartarian (very fine), Mammoth and Bigarreau Napoleon Cherries, The Czar, Purple Imperial, and Early Transparent Gage Plums, Brown Turkey Figs, Royal Sovereign Strawberries, Citrons, and a dish of Apples.

A. HENDERSON, Esq., Buscot Park, Faringdon, Berks (gr., Mr. Bastin), set up with vegetables fifteen dishes of Fruit of excellent quality, Brown Turkey Figs, Royal Sovereign Strawberries, Hale's Early Peaches, Early Rivers' Nectarines, with Mannington's Pearmain, Sturmer Pippin, Baxter's Pearmain, Bismarck and Norfolk Beautif Apples.

In No. 2 tent, Messrs. G. BUNYARD & Co. exhibited 100 varieties of Apples. The arrangement was very good, and the addition of a few foliage plants relieved the flatness usually seen where dishes of Apples only are put up. The majority of Messrs. BUNYARD's fruits were fresh and well preserved. Among the best were Bismarck, Lansberger Reineette, Wadhurst Pippin, Cornish Aromatic, Lane's Prince Albert, Calville Rouge, Annie Elizabeth, Belle de Pontoise, Murfitt's Seedling, Betty Geeson, Calville Malingre, Tippet's Pearmain, Striped Beefing, Lord Derby, Bramley's Seedling, King of Tomkin's County, Afriston Melon-Apple, Northern Greening, Bedfordshire Foundling and Red Calville. These comprised the most noteworthy specimens in the back row, and were made up of large and handsome dishes of fruits; Striped Beefing, Calville Malingre, and Belle Pontoise were very highly coloured.

The two front row dishes were of smaller size. Hoary Morning formed a very pretty dish; also Baumann's Winter Reineette, Claygate Pearmain (a good late dessert Apple), Newton Wonder (very good and highly coloured, Wagener (very bright), Allen's Everlasting Wellington, Calville d'Oullins (a bright conical Apple), Diamond Jubilee (a firm medium-sized fruit), Barnack Beauty, and a small dish of well-kept Cox's Orange Pippin.

Messrs. BUNYARD also staged a nice dish of Louis Gauthier Strawberry.

A large and showy collection from Mr. WATKINS, Pomona Farm Nurseries, Withington, Hereford, consisted of ninety dishes, and comprised large baskets of the varieties Farmer's Seedling, Cox's Orange Pippin (very fine), Striped Beefing, Belle de Pontoise, Dumelow's Seedling (very good), Hambleton Deux Ans (all in a good state of preservation and well coloured). Others also very good were Court Pendu Plat, Mannington's Pearmain, Ribston Pippin (well kept), Annie Elizabeth, King of Tomkin's County, Beauty of Kent, Graham, Brownlee's Russet, Jonathan, Blue Pearmain, Wadhurst Pippin, The Queen, Lord Hindlip, Hollandbury, Sturmer Pippin (good), and May Queen.

Messrs. CARTER & Co., High Holborn, exhibit six fine fruits of Blenheim Orange Melon.

Messrs. LAXTON BROS. contributed a collection of Strawberries in pots and dishes of fruits of "The Laxton," a large and deeply-coloured fruit, but not equal to their Royal Sovereign in flavour. They also staged the varieties Trafalgar and Mentmore, the group being arranged on a groundwork of Maidenhair Fern.

In the large tent Messrs. T. RIVERS & SONS, Sawbridge-worth, had, as in previous years, a very fine exhibit of fruit trees in pots carrying handsome highly-coloured fruits, the Nectarines being especially fine. The group consists of some fifty trees, the greater portion being of the Nectarine Cardinal, carrying large and highly-coloured fruits. It is evidently one of the best varieties for forcing in pots, being of good flavour, free, and highly coloured.

Two grand dishes of the same variety were also staged.

In this group there were also half-a-dozen heavily-fruited May Duke Cherries, and two new varieties of Peaches, Duchess of York and Duke of York, the former receiving the distinction of an Award of Merit.

VEGETABLES.

Specially attractive and representative was the superb collection of vegetables sent up from Elstree by Lord ALDENHAM, Mr. E. Beckett, his lordship's gardener, fairly distancing his former efforts in this direction. The collection comprised seventy-four dishes and covered some fifty feet run of tabling. Being set up on white paper and not crowded, each dish was effectively displayed. There were small but snow-white May Queen and Early Forcing Cauliflowers; Late Queen, and Model Broccolis; Perfection, Long White, Muir's Hybrid, and Pen-y-bil Marrows; extra fine Seakale, Giant Model Leeks, Rocca and other Onions, various Cabbage and Cos Lettuces; Mustard and Cress growing in large baskets. Ten varieties of Tomatoes, good Asparagus; Victoria and the Sutton Rhubarb, the latter richly coloured; Edmund Beckett and Early Morn Peas, Radishes in variety, Canadian Wonder, and Ne Plus Ultra dwarf Beans; Mona's Pride, Windsor Castle, and Sharpe's Victor Potatoes, Mammoth Long-Pod Beans, Butter Beans, Early Milan Turnips, Giant Spinach, Beets, Carrots, &c. In addition there was a group of Edmund Beckett Peas in pots, very finely fruited. This excellent Pea obtained a First-Class Certificate at Chiswick last year.

Messrs. H. CANNELL & SONS, Swanley, had close-by growing in boxes their Peas, English Wonder, and Edward the Seventh, in excellent condition.

THE HORTICULTURAL COLLEGE, at Swanley, made a capital show for an Educational Institution, with Vegetables, having two or three varieties of Peas in pots, well podded, several fine bunches of rich, coloured Radishes, good Broccolis, forced Peas, Excelsior, Little Gem, Daisy, and Duchess of York; Dwarf Beans, Canadian Wonder, Ne Plus Ultra, and Negro; Cabbages, Lettuces, Cucumbers Royal Osborne, Rochford, Earliest-of-All, Carter's Favourite, Telegraph, and others; good Asparagus, Potatoes, and various other products, all in excellent condition.

From Buscot Park, Berks, A. HENDERSON, Esq., M.P. (gr., Mr. W. Bastin) sent up capital Green Gem and Little Marvel Peas in pots, carrying good crops, Early Giant and Forcing Peas in dishes; Cucumbers, Matchless and Prizetaker; Snowball Cauliflowers, Cabbages, Radishes, Asparagus, Marrows, Seakale, all in excellent condition.

A very remarkable group was that sent up from Reading by Messrs. SUTTON & SONS, who had on a long side table backed by Tomato plants in pots, very heavily fruited, Peas in pots, also Potatoes in boxes, and numerous baskets and dishes of these products. The Tomatoes in pots included Princess of Wales, Best-of-all, Dessert, Peerless, Winter Beauty, and others; most of the plants were heavily laden with fruit. Of Peas, Duchess of York, Early Giant, May Queen, Ideal, Al, and others; also of Potatoes in boxes, these having one side in each case removed and replaced with glass, showing the plant's capacities in tuber production in a capital way. Of these Ninety Fold, Ringleader, Harbinger, Al, and Ashleaf, were excellent. In baskets and dishes were: of Potatoes, fine tubers of the varieties named; of Tomatoes, Tender-and-True, Winter Beauty, Dessert, Dwarf Gem, Lemon Yellow; and of Cucumbers, Matchless, and Lord Roberts, in pots and carrying very fine fruits. This is without doubt the best collection of vegetables the firm has staged at these shows.

Mr. E. A. COMYN, Essex, had plants of a Cucumber having creamy-white leafage. It was not in fruit.

Mr. S. MORTIMER, Swiss Nursery, Farnham, staged twelve fine fruits of a new Cucumber, named Famous, long, slightly spiny, dark green, and of good flavour. Also a cluster of the same with stems attached, showing remarkable prolificacy.

Mr. J. J. UPTON had fruits of Cucumber Freedom, a long smooth pale sample, rather too large for use.

Mr. J. KEY ALLEN, of Northampton, sent four dishes of Duke of Albany Pea, a very fine, clean sample indeed, of purely amateur production.

Messrs. JAS. CARTER & Co., High Holborn, staged in baskets very fine samples of Peas, Daisy, Telephone, and Early Morn Holborn Wonder; French Beans, and long podded Runner Beans, Duke of York, and Market Favourite Tomatoes, the whole being effectively presented.

Asparagus came in remarkably fine samples from Colchester, Mr. A. J. HARWOOD having six big bundles of about 100 stems. Mr. GODFREY, six bundles of a similar sample. And Mr. F. CHAPMAN, four bundles. The stems were about ten inches long of good size, superbly grown and admirably illustrating what home culture can accomplish.

Mr. J. UDALL, Droitwich, had stems set up loosely, and from 12 to 14 inches long, very much blanched, and some of great size, but the sample was not so good for table as were the Colchester stems. In one case Vegetables and Fruits were intermixed. That is an objectionable arrangement. Gene-

rally the grouping of these products was more satisfactory than in previous years, but the rule compelling the staging of all vegetables separate from other products wants to be rigidly enforced. What vegetables can do in making an attractive display Mr. BECKETT'S collection illustrated. Really it was one of the great features of the show.

AWARDS OF MERIT.

Peach, Duchess of York.—A nice looking early Peach of the Noblesse type, that may probably prove a useful early variety.
Cucumber "Famous".—A long, green, slightly spiny fruit, wonderfully prolific, from Mr. S. MORTIMER, Farnham.

Awards given by the Council independently of those recommended by the Committees.

The names are arranged indiscriminately.

GOLD MEDAL.

Lord Aldenham, for Vegetables.
 F. Sander, for Orchids.
 James Veitch and Sons, for General Exhibit.
 T. S. Ware, for General Exhibit.
 Fisher, Son & Sibray, for General Exhibit.
 W. Paul & Son, for Roses.
 Guildford Hardy Plant Co., for Alpines.

HOGG MEDAL.

Thos. Rivers & Son, for Fruit Trees.

SHERWOOD CUP.

Sir F. Wigan, Bart., for Orchids.

SILVER CUPS.

Jas. Cypher, for Orchids.
 H. Low & Co., for Orchids.
 Leopold de Rothschild, for Vanda teres.
 Barr & Sons, for General Exhibit.
 G. Mount, for Roses.
 J. Watkins, for Apples.
 Geo. Bunyard, for Apples.
 Sir Jos. Pease, Bt., for Fruit.
 Lord Wantage, V.C., for Fruit.
 J. Carter & Co., for General Exhibit.
 Sutton & Sons, for General Exhibit.
 H. Cannell and Sons, for General Exhibit.
 W. Cutbush & Son, for General Exhibit.
 Lord Rothschild, for Moss Roses.
 Capt. Holford, C.I.E., for Hippeastrums.
 Messrs. Cuthbert, for Azaleas.
 R. I. Measures, for Insectivorous Plants.
 Paul & Son, for Roses, &c.
 R. Smith & Co., for Clematis, &c.
 C. Turner, for Roses, &c.

SILVER GILT FLORA MEDALS.

Stanley, Ashton & Co., for Orchids.
 J. Cheal & Sons, for Hardy Shrubs and Herbaceous Flowers.
 Laing & Son, for Begonias, Gloxinias, and Streptocarpus.
 Jackman & Son, for Clematis and Hardy Flowers.
 Cripps & Son, for Japanese Maples.
 J. Hill & Son, for Ferns.
 J. Peed & Son, for Caladiums, Begonias, &c.
 R. Wallace & Co., for Hardy Flowers.
 John Waterer & Son, for Rhododendrons, &c.

SILVER GILT KNIGHTIAN MEDALS.

Alex. Henderson, Esq., M.P., for Fruit and Vegetables.

SILVER GILT BANKSIAN MEDALS.

Mr. Rumsey, for Roses.
 Messrs. B. R. Cant & Sons, for Roses.
 Messrs. Fromow & Sons, for Maples.
 Mrs. Hart, for Japanese Trees.
 Messrs. Hogg & Robertson, for Tulips.
 Mr. Amos Perry, for Hardy Plants.
 Messrs. Storrer & Storrer, for Auriculas, &c.
 Messrs. B. S. Williams, for Orchids, &c.

SILVER FLORA MEDALS.

Messrs. Charlesworth & Co., for Orchids.
 Mons. L. Linden, for Stove Plants and Orchids.
 J. Leemann, Esq., for Orchids.
 Mr. Hartland, for Tulips.
 M. Prichard, for Cut Flowers.
 Mr. J. R. Box, for Calceolarias.
 Mr. A. J. Bruce, for Sarracenias.
 Messrs. F. Cant & Co., for Roses.
 Messrs. Dobbie & Co., for Violas and Sweet Peas.
 Mr. Eida, for Japanese Trees.
 Mr. Jannoch, for Lilies.
 Mr. H. J. Jones, for General Exhibit.
 Mr. H. B. May, for General Exhibit.
 Mr. J. Russell, for General Exhibit.
 Mr. J. J. Upton, for Gloxinias, &c.
 Messrs. Webb, for Gloxinias.

SILVER KNIGHTIAN MEDALS.

Mr. W. Godfrey, for Asparagus.
 Messrs. Laxton Bros., for Strawberries.
 Horticultural College, Swanley, for Vegetables.

SILVER BANKSIAN MEDALS.

Messrs. Cowan & Co., for Orchids.
 J. Rutherford, Esq., for Orchids.
 Messrs. Kelway & Sons, for Cut Flowers.
 Mr. F. Chapman, for Asparagus.
 Mr. H. A. Harwood, for Asparagus.
 Mrs. Bodkin, for Cacti.
 Mr. L. Ching, for Ferns.
 Mr. Fl. Claes, for Orchids.
 Mr. H. T. Dixon, for Carnations.
 Mr. K. Drost, for Lilies.
 Mrs. Farrer, for Alpines.
 Lord Hillingdon, for Carnations.
 The Misses Hopkins, for Alpines.
 Mr. W. Iceton, for Lilies, &c.
 Messrs. Jones & Sons, Shrewsbury, for Sweet Peas and Irises.
 Mr. A. Knowles, for Daphnes.
 A. Meyers, Esq., for Calceolarias.
 Mr. Newport, for Lobelias.
 Mr. Notcutt, for Cut Flowers.
 Mr. W. G. Piper, for Roses.
 Funnell Funnell, Esq., for Rhododendrons.
 Mr. R. Sydenham, for Sweet Peas.
 Mr. W. Sydenham, for Pansies.
 Messrs. Watkins & Simpson, for Lantanas, &c.
 Messrs. Young & Co., Stevenage, for General Exhibit.

CULTURAL COMMENDATIONS.

Mr. J. Udale, for Asparagus.
 Messrs. Cutbush, for Peas.
 Mr. J. Allen, for Peas.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

MAY 16.—The annual general meeting of the above was held on this date, and was well attended by the members. The report and balance-sheet showed the Society to be in a flourishing condition.

J. LEEMANN, Esq., won the Gold Medal for the highest number of marks gained during the year; O. O. WRIGLEY, Esq., was 2nd, and S. GRATRIX, Esq., 3rd.

The meeting adopted the following resolution:—"That one First-class Certificate only be awarded to any one distinct plant, and that if desired by other owners of plants, which have been previously certificated, a warrant shall be given under the direction of the committee, stating that the plant or plants exhibited by them are similar to those which have been awarded a First-class Certificate by the committee."

The following FIRST-CLASS CERTIFICATES were awarded:—
 Odontoglossum crispum var. Confetti—J. Leemann, Esq.
 Odontoglossum crispum var. Perfection—John Cowan & Co., Ltd.
 Cattleya Skinneri albens, Keeling's var.—Mr. A. J. Keeling.
 Cattleya Skinneri intermedia alba, Leemann's variety.—J. Leemann, Esq.

AWARDS OF MERIT.

Odontoglossum crispum, var. Ruby Gem—J. Leemann, Esq.
 Odontoglossum crispum, var. Mrs. Leemann.—J. Leemann, Esq.
 Odontoglossum crispum, var. Countess of Derby.—J. Leemann, Esq.
 Odontoglossum crispum, var. Domino.—J. Leemann, Esq.
 Odontoglossum × loochristiense, var. roseum.—J. Cowan & Co., Ltd.
 Odontoglossum crispum, var. Premier.—T. Baxter, Esq.
 Cattleya Mossie, var. heatonense.—W. Duckworth, Esq.
 Cattleya Schroderae.—W. E. Watson, Esq.
 Cattleya citrina, Watson's var.—W. E. Watson, Esq.
 Group, Gold Medal.—J. Leemann, Esq.
 Group, Silver Medal.—T. Baxter, Esq.
 Group, Silver Medal.—W. E. Watson, Esq.
 Group, Vote of Thanks.—Mr. J. Cypher.

DUMFRIES AND GALLOWAY HORTICULTURAL.

MAY 18.—A meeting was held in Dumfries on the above date, when it was decided to try and make a fresh start with the Society. Mr. R. Service held out a hopeful prospect of success if special effort were made, and with this view the following committee was appointed to supersede the old committee, viz., Messrs. John McKinnon, Terregles Gardens; James Davidson, Summerville; Charles Scott, Terraughtie; James McGregor, Castledykes; James Kennedy, nurseryman R. Service, Janehead; T. K. Newbigging, Stewart Hall; S. Arnott, Carsethorn; and John Learmont, Larchfield. Mr. R. G. Mann, Cairnmore, was appointed Secretary and Treasurer. R. J. A.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—The sixty-second annual dinner of this estimable gardening charity took place on Wednesday, May 22, in the Whitehall Rooms, Hôtel Métropole, under the presidency of Lord Llangattock, supported by the Rev. the Dean of Rochester, N. N. Sherwood, Esq., H. J. Veitch, Esq. (Treasurer of the Institution), and other gentlemen. The dinner was of the usual excellent kind provided on these occasions, and the table was befittingly and gracefully decorated with flowers and fruit in abundance, contributed by the friends of the Institution. The proceedings were enlivened by some capital vocal and instrumental music. The President, in proposing the usual loyal toasts, made a touching allusion to the virtues, goodness, and bright example of her late Majesty Queen Victoria, the lamented patroness of the Institution. He also congratulated his Majesty King Edward on his accession. The President shortly afterwards gave the toast of the evening, coupling it with the name of Mr. H. J. Veitch, explaining the desirable objects of the Institution, that of providing for gardeners and their widows, who might, in the evening of their days, and from unavoidable causes, fall into poverty. Such persons were, he said, deserving recipients of their bounty, for the gardeners of this country had almost changed the character of the landscape, laid out beautiful gardens, and immensely added to the necessities and comforts of modern life, alluding in this respect to the labours of Mr. H. E. Milner; and in his own gardens at The Hendre, Monmouth, to the great assistance and initiative of his "good friend," Mr. T. Coomber. The President concluded his speech with a brief résumé of the history of the Institution, and the hope that the twenty-one unsuccessful candidates at the last election would be successful next time, and that all those present would do their utmost to support the Institution. Mr. Veitch, in returning thanks for the toast, said that their affairs were progressive, in spite of the somewhat unfavourable circumstances in which the country found itself, which affected all societies depending for their support on voluntary subscriptions. The speaker traced the progress of the charity from its very modest beginnings, and alluded to the many noblemen and gentlemen who had presided at its festival dinners, mentioning the Dean of Rochester, who was its president in 1872. The toast of "Gardeners and Gardening," proposed by Lord Llangattock, was responded to by the Dean in terms that touched all hearts, and which unfortunately our limited space forbids us to publish. Mr. N. N. Sherwood had some pertinent remarks to make in responding to this toast. At the conclusion of the function, Mr. Ingram (secretary) announced a number of handsome donations. From the President, £100; the Messrs. Rothschild, 100 guineas; Baron Schroder, 100 guineas; Mr. Arthur Sutton, £100; Mr. Leonard Sutton, £100; Mr. N. N. Sherwood, £50; Covent Garden table, £86—the total sum given or promised being £1761.

THE KEW GUILD held its annual general meeting and Dinner at the Holborn Restaurant, London, on Tuesday evening last. The meeting at 7 o'clock was purely formal, and the committee's report, which included the nominations of Messrs. JNO. AIKMAN and R. A. ROLFE to serve upon the committee in place of Messrs. DALLIMORE and GARRETT, was accepted without comment. The dinner was served in the Venetian Chamber, and the chair was taken by Sir WILLIAM T. THISELTON-DYER, K.C.M.G., &c., Director of Kew. There were about 140 present and past Kewites at the dinner including five ladies. Sir WM. DYER, in proposing "The Kew Guild," said that it now includes some 600 members, and many of these were scattered in the four corners of the earth. In Asia there were forty-five, in Africa twenty-eight, in America sixty-six, and in Australasia sixteen. There were Kewites also in the Falkland Islands, in Chili, in Fiji, in the Transvaal, on the West Coast of

Africa, and indeed everywhere. It was sympathy in a common pursuit that united the members of the Guild. They were actuated by the determination to do their part in the work that each had before him, and they were grateful to mother Kew for the lessons they had learned there, and the inspiration it had given them. Sir WILLIAM referred to the reputation that Kew and Kew men had obtained throughout the world. Kew put a stamp upon its men which passed currency, and which all valued. Sir WILLIAM also referred to Mr. FITZGERALD, on his right hand, a representative of the Board of Works, and said that he was a kind of "buffer" between Kew and the Government, and his tact and sympathy had shown itself greatly to the benefit of Kew, although that gentleman had held the position but a short time. It was to Mr. FITZGERALD that they owed the prospect of possessing next year a really first-rate cricket-ground, in the Old Doer Park, for the garden club. This toast was responded to by Mr. J. R. JACKSON on behalf of the present Kew men, and by Mr. F. W. BURBIDGE on behalf of the past Kewites. Sir WILLIAM DYER, in coupling the names of these gentlemen, paid a high tribute to Mr. JACKSON'S honourable association with Kew since 1858. Throughout the long period he had faithfully performed his duties, to the advantage of the establishment and to the personal interest of the young men at Kew. We ourselves know that Mr. JACKSON'S lectures on economic botany in the Museum have been some of the most popular delivered at Kew. Mr. JACKSON was very warmly welcomed as he rose to speak, and he said he had seen three Directors at Kew, and several Curators. The time would soon come (during the present year) when he must retire from Kew, but his interest in that establishment and in the Guild would remain always. The musical arrangements were those of Mr. HERBERT SCHARTAU, and were much enjoyed. The Hon. Sec., Mr. WATSON, upon whom most of the work connected with the dinner has devolved, may be congratulated on this successful effort.

LAW NOTES.

LORD AYLESFORD AND HIS GARDENER.

BAGG v. the Earl of AYLESFORD. The plaintiff in this action, Archibald Bagg, a gardener, sued the Earl of Aylesford, at the Coventry County Court last week, to recover the sum of £3 6s. 8d., balance of a month's wages. There was a counterclaim for £16 17s., being damages said to have been sustained by the defendant through the negligence of the plaintiff, the latter having represented himself to be competent to undertake the management of the Orchid-houses of the defendant, whereas, it was alleged, he was not so competent, and that by his negligence and improper management he had caused the loss of certain Orchids, and other plants. The defendant did not appear, but Mr. Masser appeared on his behalf, and Lady Aylesford was present.

The plaintiff in reply to Mr. Maddocks, who appeared on his behalf, stated that he was engaged as gardener, his duties being to take charge of the Orchid-house and to assist in stoking, and to take charge of the Violets, his wages being £1 a week. He was there about four months, and then gave notice. There was a head gardener. Lady Aylesford had told him that he did not know much about Orchids. He had been with the Right Hon. Joseph Chamberlain, and although he could satisfy that gentleman, he could not satisfy Lady Aylesford. When he had worked out his month's service, he asked for payment of his wages, £3 6s. 8d., and it was refused. When he was engaged, there was no arrangement made that he was to pay for plants that died. Lord Aylesford wrote to his solicitor alleging culpable negligence on plaintiff's part, and that an Orchid specialist had recommended that the entire charge of the Orchids should be taken out of his hands. Witness was not paid the

wages of an Orchid specialist. He did not think £1 per week were the wages of an Orchid specialist. He believed he had had as much experience in Orchids as the gardener at Lord Aylesford's. He had tried to please her ladyship, but had failed. Orchids were the same as other plants; they sometimes died.

Lady Aylesford, on being called, alleged that plaintiff left the ventilators open on a frosty night, and it was chiefly owing to his negligence that the Orchids died.

A sub-agent in the employ of Lord Aylesford admitted that his lordship had had two head gardeners in six months.

Mr. Burbury, of King's Heath, gave expert evidence, and said that when he examined the Orchids in March they were in poor condition, but that might have been due to negligence prior to November, when plaintiff was first engaged.

His Honour found for the plaintiff for the amount claimed, and the counterclaim was dismissed with costs.

HORTICULTURAL LIBEL CASE.—The action for libel brought by Mr. H. J. JONES against Mr. W. WELLS, nurseryman, Earlewood, was decided in the High Court of Justice on Tuesday last. Plaintiff was awarded £50 damages.

ANSWERS TO CORRESPONDENTS.

BRANCHING TULIP: *J. E. F.* This condition is not uncommon, and is generally associated with unusual vigour of the bulb.

CARNATIONS: *W. H. D.* Your leaves are affected with a fungus. Burn them, and spray the healthy leaves with liver of sulphur, $\frac{1}{2}$ ounce to 1 gallon of water.

CLOVER ON LAWN: *J. R.* Try the effect of nitrate of soda, or sulphate of ammonia. These will encourage the grasses, but are of no benefit to the Clover, *Trifolium subterraneum*.

CUPRESSUS MACROCARPA DYING: *Very Anxious, Kerry.* Plants 4 to 5 feet high, unless removed with great care, and a certain quantity of soil adhering to the roots, and planted soon after lifting, and not left about drying in the sun and wind, would be very apt to go off as the plant sent has done. Under any circumstances, excepting the most favourable, such plants are too big for ordinary planting in exposed land, as they would be sure to suffer from wind-rocking, unless each was furnished with a stick. Wind-rocking means injury to and loss of roots, and hindrance to rooting and early re-establishment. A plant 2 feet high is as big as is admissible in forming plantations.

GRASS COLMAR VINES: *J. McCl.* The shoots sent show undue vigour, resulting from a border made too rich for the Vine; the shoots and some of the ribs of the leaves showing fasciation to a slight extent. This over-luxuriance will, however, disappear after a year or two, and the Vines come into fruit, and you abstain meantime from applying manure in any form. The Vine-mildew, *Oidium Tuckeri*, has attacked the Vine, and the usual white patches have appeared on the upper and lower surfaces of the leaves. In order to prevent further attacks, the vinery should be kept warm, fairly dry, and well ventilated. Cool, close, stagnant air always tends to the spread of mildew. Paint the hot-water pipes with lime-wash and flowers-of-sulphur, and syringe the Vines with sulphide of potassium $\frac{1}{2}$ oz., and rain water one gallon, several times.

EVERGREEN OAK-LEAVES: *Rus in Urbe.* The leaves are probably those of the Fulham or of the Lacombe Oak. The Horse-Chestnut appears sickly.

LAWN SPOILED BY SALT: *C. H. F.* If the grasses are merely browned, not killed, afford a heavy application of water, and a day or two later a slight dressing of finely sifted loam, and roll the lawn afterwards. The moss will probably not trouble you this year, but you should ascertain the cause of the moss growing so plentifully. Perhaps the lawn wants draining, or there may be too much shade from big trees.

LIME TREE: *C. S. Sleaford.* "Nail galls," the work of a mite.

MELON ROOTS: *J. H. C.* Badly affected with eel-worm. You can do nothing but burn the plants, and start afresh with fresh loam that has been stacked for a year or two; or if you grow on a small scale, you might bake the soil before using it.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*D. & W.* *Pteris serrulata*; rather narrow in the pinnae, perhaps, but quite an ordinary type of serrulata.—*P.* *Pinus excelsa*, as far as we can tell from the scrap sent.—*K. S.* Mahaleb Cherry (*Prunus Mahaleb*).—*J. McCl.* *Magnolia Soulangeana*.—*S. P.* 1, *Berberis Darwinii*; 2, *Lonicera tartarica*; 3, *Epimedium pinnatum*; 4, *Epimedium rubrum*; 5, *Viburnum Opulus*; 6, *Fritillaria imperialis*.—*P. W.*, *Magdeburg.* *Dendrobium thyrsiflorum*, in which the labellum is extraordinarily undeveloped. We never saw the peculiarity exhibited in so marked a degree and so uniformly in the whole of the flowers of the inflorescence. Some abnormal forms are constant, and come the same every time the plants flower. Please inform us how the plant behaves when next it blooms. The photograph will be useful to compare it with *D. Gallicanum*, *Lindenia*, vi. p. 5, is a remarkable departure from the normal in *D. thyrsiflorum*, but in that case the lip is large and flat, and altogether different from the type. In yours the lip is scarcely produced.—*W. K.* 1, *Azara microphylla*; 2, the Red Wood, *Sequoia sempervirens*.—*G. J.* 1, a seedling stage of some *Cupressus*; 2, *Ornithogalum nutans*; 3, *Jasminum grandiflorum*; 4, *Asplenium*; 5, *Saxifraga hypnoides*; 6, *Spiraea Thunbergi*.—*J. G.* 1, *Prunus Padus*; 2, *Buddleia globosa*; 3, *Piptanthus nepalensis*.—*D. W. S.* 1, *Daphne cneorum*; 2, *Audromeda spinulosa*.—*R. R.* Two large forms of *Odontoglossum crispum* in one of which the prolonged tips to the petals is peculiar. Please note its peculiarities when next it flowers. The yellow one is near to *Odontoglossum* \times *Adrianae aureum*.—*J. S.* *Tiarella cordifolia* (Foam Flower).—*D. C.* 1, *Pulmonaria saccharata*; 2, *Prunus Padus*; 3, perhaps *Maranta Makoyana*; 4, *Carex acutifolia*; 5, *Anthericum lineare variegatum*.

PEAR-LEAVES: *Pear.* The work of a mite, whose name we are unable to tell, none being visible. These minute creatures are most difficult to combat, the mischief being done before the cultivator has any idea of the presence of the mites. Early dressing the trees with Quassia-water to make the leaves distasteful to the mites, might be tried.

PEAR LEAVES THICKENED AND DISFIGURED: *Cultivator.* The galls are the work of a mite invisible to the naked eye, *Phytoptus Piri*. Collection of and burning the affected leaves, charring the layer of soil beneath the trees, and dressing the leaves early in the spring with soapy suds, in which Quassia chips have been steeped, might be tried.

PELAGONIUMS: *H. R.* Send them to some grower. We do not undertake to name florists' flowers; moreover, the petals had all fallen.

VINES: *D. L.* If the dressing was of a kind injurious to vegetation when used at too great a strength, we might expect the Vines to break irregularly, more especially if they were dressed after January in the case of Vines habitually forced early, and after February in the case of those that are not much forced. We have never known a Vine not to break at all after being dressed with an insecticide. If water was withheld for a period of five months from an inside Vine-border, it probably would cause the shoots to break weakly, and eventually die back if water was still withheld. Whether injury to any great extent followed the drying of the soil would depend upon the depth of the border, the state of the drainage, nature of the soil and of the subsoil, and height of the border above the surrounding level of the garden.

COMMUNICATIONS RECEIVED.—Cultivator—*W. J. C.*—*R. P.*—*W. G. S.*—Eighty-one—*T. R.* & Son—*A. W.*—*F. M.*—*N. S. D.*—*D. R.*—*J. Auchinvole*—*J. S.*—*E. C.*—*S. D.*—*S. A.*—*E. Webb* & Sons—*A. D.*—*E. J.*—*H. J. J.*—*W. W.*—*W. B. H.*—*W. K.*

(For Markets and Weather, see p. x.)



HÆMANTHUS MIRABILIS: FLOWERS SALMON-COLOURED. FROM M. LINDEN, BRUSSELS.

THE ROYAL HORTICULTURAL SOCIETY.

THE TEMPLE SHOW.

MAY 22, 23, 24.

THE fourteenth annual "Temple Show" was opened on Wednesday last in the Inner Temple Gardens, by permission of the Treasurer and Benchers. The weather during the first two days was most satisfactory, and the attendance very large. The receipts at the gates upon the first day amounted to £60, more than upon the first day last year. There was a rumour as we went to press that Queen Alexandra would visit the show on Thursday. Under canvas there were 12,000 square feet of space, and a greater number of exhibits than usual was arranged in the grounds out-of-doors. Altogether the exhibition was a splendid one, and afforded rather more variety than usual. As showing how much work the various Committees are called upon to do on such occasions, we may state that there were something like 180 plants and flowers entered for Certificate before the FLORAL COMMITTEE, more than seventy before the ORCHID COMMITTEE, and six before the FRUIT AND VEGETABLE COMMITTEE. If the Floral Committee spent but one minute in examining each plant entered, there would be three hours necessary for the purpose.

The actual awards to novelties amounted to a small proportion of those entered, the ORCHID COMMITTEE recommending three First-class Certificates and eight Awards of Merit; the FLORAL COMMITTEE nineteen Awards of Merit; and the FRUIT AND VEGETABLE COMMITTEE two Awards of Merit.

The arrangements, so far as the exhibitors and the Press were concerned were never better, and thanks are due to the Rev. W. Wilks, Mr. Reader, Mr. S. T. Wright, and Mr. T. Humphreys.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the Chair; and Messrs. Jas. O'Brien (Hon. Sec.), de B. Crawshaw, F. A. Rehder, R. Brooman-White, H. Ballantine, T. W. Bond, W. A. Bilney, H. A. Tracy, F. J. Thorne, J. W. Odell, A. Hislop, W. H. Young, T. Rochford, E. Hill, J. Colman, W. Cobb, H. T. Pitt, H. J. Chapman, H. Little, J. G. Fowler, E. Ashworth, and G. W. Law-Schofield.

The grand show of Orchids was, on the whole, allowing for certain exceptions, up to the high standard of former years, the now favourite Odontoglossums, in point of quantity and quality, being perhaps better than at former shows. The arrangement was similar to that adopted last year, the centre of the large marquee being entirely taken up with fine groups of Orchids, similar exhibits occupying one side of the central staging in the adjoining tent.

Some sixty novelties were entered to go before the Committee, and those which found favour are enumerated in the appended list of awards. Beyond these were many very fine and unique things, which Messrs. F. Sander & Co., and some other exhibitors, did not enter to go before the Committee in order not to prolong their labours.

Arranged at the entrance of the grand marquee, LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury Park, Acton (gr., Mr. Reynolds), had a most beautiful and remarkable group of Vanda teres, very artistically displayed, and well showing off the 300 or so fine spikes of charming, large, rose and white flowers. With them were several of the large-flowered Gunnersbury Park variety, and the whole formed a remarkable exhibition of cultural skill, nearly every plant of this fine Orchid in Mr. Reynolds' hands having flowered profusely.

Continuing up the central staging, Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen (gr., Mr. W. H. Young), well occupied the post of honour, so considerably vacated on this occasion by Sir Trevor Lawrence through stress of space. The fine group was the largest exhibited by an amateur, and contained a very large number of rare and showy things, all excellently well grown. At the back were some fine specimens of Cymbidium Lowianum arranged with Oncidium sarcodes, O. concolor, O. cryptocypis, O. superbiens, and other elegant species. The Cattleyas were represented by very fine forms of C. Mossiae, including the white C. M. Reineckiana, with seven flowers; and the richly coloured C. M. Dulce. The flowers of C. Mendeli were equally good, C. Skinneri of the best old type; C. Skinneri alba, with twenty seven flowers; C. Schilleriana, C. superba splendens, and C. Forbesii. The Odontoglossums comprised some excellent varieties of O. crispum, O. c. marmoratum, a pretty and distinct flower; O. x elegans, O. x excellens, varieties of O. x Adrianae, O. Hallii, O. x Andersonianum varieties, and O. Ernestii. The fine Lælia purpurata included L. p. Backhouseiana, L. p. Arthur Wigan. The Cypripediums C. callosum Sanderi, C. bellatulum, and C. b. album, C. Rothschildianum superbum, C. Godefroyæ leucocylum, C. niveum. The Masdevallias made a very bright effect, the principal specimens of them being M. Harryana,

M. Lindenii, M. Veitchiana, M. x Pourbaixi, M. ignea Eek-hautli. Other fine specimens noted were Dendrobium nobile, with 350 flowers; D. Farmeri and D. F. album Angreum mode-tum, Phalenopsis speciosa, P. grandiflora, P. Sanderiana, Eria extintoria, Scuticaria Hadweni, Maxillaria Sanderiana, fine specimens of Aerides Fieldingi, Thunia Wiganiana, with orange and red labellum; Lælio-Cattleya x G. S. Ball, the new and fine L.-C. x Edgar Wigan, some good specimens of Miltonia vexillaria, M. Roezlii, and M. x Bleuana; Cymbidium Devonianum, with six spikes; C. tigrinum, Cochlioda Noezliana, and good Ada aurantiaca.

LUDWIG MOND, Esq., The Poplars, Avenue Road, Regent's Park (gr., Mr. J. O. Clarke), staged a very pretty and effective group, tastefully set up with fine foliage plants. The Orchids were good—Cymbidium Lowianum, Cypripedium Mastersianum, Lælia purpurata, Cattleya Mossiae, C. Schroderæ, C. Mendeli, a well-grown Angreum sesquipedale, Odontoglossum crispum, O. citrosimum, Oncidium Papilio, and O. Kramerii.

Messrs. F. SANDER & Co. staged a most effective and extensive group of Orchids, composed of over 300 fine specimens, comprising many unique varieties, the whole of the exhibits being of excellent quality, and worthy of the show stand. Among the most remarkable were Odontoglossum crispum "R. H. Measures," a very large and distinct form, with large primrose-yellow flowers, the sepals bearing one large irregular purplish-brown blotch, and a few smaller; and the petals from two to five blotches of similar colour; lip large, white with brown blotches. O. triumphans Delangeana, an enormous flower, the broad sepals of which, except the yellow tips, were of a rich brown colour; petals also reddish-brown with some irregular yellow markings from the margin; lip broadly ovate chestnut-brown with yellow crest and white margin; O. x Rolfeæ "Mrs. R. H. Measures," one of the finest of the O. Pescatorei and O. Harryanum crosses, with finely-formed pure white flowers spotted with purple; O. crispum album, large and pure white; O. x Adrianae "Memoria Victoriae Reginae," a silvery-white form with blackish-purple spots; O. crispum "Mrs. R. Brooman-White," a grand white with a cluster of purplish spots in each segment; O. x Adrianae "Canary Bird," clear yellow with red-brown spotting; O. Pescatorei Emperor, with purple spots on the sepals and petals; O. x Harryano-crispum Duchess of York, a noble flower, spotted with purple; the yellow O. Vuytstekeanum, O. x elegans; a splendid and varied selection of their fine broad-petalled type of O. crispum; the violet O. Edwardi, O. facetum nobilior, fine varieties of O. x Andersonianum and other hybrids. The Cattleyas included the pure white C. intermedia Parthenia, several C. Mossiae Reineckiana, the beautiful C. Mendeli Queen Alexandra, a pure white flower with light yellow centre to the lip, which was marbled with rose-purple in front; a fine C. Skinneri alba, Miltonia x Bleuana gigantea and M. B. nobilior, two plants of the feather-lipped Bulbophyllum barbigerrum, the new Cypripedium x Gottianum (Godefroyæ leucocylum x Harrisianum), some bright-coloured Masdevallias, and fine forms of most of the showy species of the season.

Messrs. B. S. WILLIAMS & SON, Holloway, had an effective group in which their specialty of Vanda tricolor and V. suavis varieties well furnished the background; with them was a fine selection of about thirty-six excellent varieties of Cattleya Mossiae, showing considerable variation. Good specimens of Cymbidium Lowianum, Lælia purpurata, Cypripediums, &c., including C. x Gowerianum magnificum.

Mr. JOHN COWAN, Gateacre Nurseries, Liverpool, arranged a group of excellent forms of Odontoglossums, Cattleyas, &c., among which were several very good Odontoglossum crispum, O. x Adrianae, O. x Mulus, O. triumphans, &c.; also two finely-grown specimens of Celogyne pandurata. Two examples of O. x Adrianae were specially remarkable, the one a large white flower with a profusion of purplish spots, and the other bearing thirty-three flowers, yellow with brown spotting.

Mr. JAMES CYPHER, Cheltenham, continued with a remarkably showy group, set up in his usual effective manner, with the tall and slender species arching over from the back of the group, which was chiefly composed of showy forms of Cattleya Mossiae, C. Mendeli, C. Skinneri, C. Warneri, and the fine forms of Lælia purpurata which they so successfully cultivate. With them were many good specimens of Miltonia vexillaria, brilliant Masdevallias, Cattleya citrina, Odontoglossums, including some excellent forms of O. crispum, Dendrobium x Nestor, D. x rhodopterygium, an attractive batch of good Oncidium Papilio, and the allied O. Kramerii, the scarlet Epidendrum radicans, Cypripedium Lawrenceanum, and other Cypripediums, &c.

Messrs. CHARLESWORTH & Co., Heaton, Bradford, staged a very fine, fresh-looking group of excellently well-flowered Orchids, in which their specialty of hybrids were well represented. Among them were three fine examples of Lælia x Mozart (Boothiana x purpurata), a showy and very floriferous hybrid; good Miltonia x Bleuana, the new Lælio-Cattleya x Ivernii, L.-C. x Hippolyta, with three spikes of

together thirty-two flowers (Cultural Commendation); a grand form of L.-C. x callistoglossa, L.-C. x G. S. Ball, a very large L.-C. x Schilleriana, Cattleya x Parthenia, Lælia x Major-Gen. Baden Powell, the remarkable Lælia purpurata Sunray, with feather-like purple veining on the petals; L. Digbyana, Cattleya Mendeli Aurora, very distinct and pretty; some remarkable forms of C. Mossiae, Masdevallia Arminii, and M. x Imogene; and among a very fine set of Odontoglossums, O. Halli Heatonense, with the sepals and petals nearly all chocolate colour, except the yellow tips; fine O. Pescatorei, and the handsomely-blotched O. crispum Minerva.

Messrs. HUGH LOW & Co., Bush Hill Park, had a fine group, the main feature in which was their splendid type of Cattleya Mossiae, of which C. M. Sir Alfred Milner was a unique form of the C. M. Reineckiana class, but with a peculiar bluish tint. The O. Mendeli were also fine, C. His Majesty being a grand white flower with rose-crimson lip, and C. M. aurantiaca a large light form with orange throat; C. Schroderæ alba and C. Skinneri alba also were good, and the green and white Cypripedium Lawrenceanum Gratixianum, distinct from its ally C. L. Hyeanum. Also in the group were some excellent Odontoglossums, Cymbidium Lowianum canariense Lælia majalis, L. purpurata nobilior, with white sepals and petals slightly veined with rose, and with a very finely coloured lip; Lælio-Cattleya x Highburyensis, &c.

Messrs. STANLEY, ASHTON & Co., Southgate, exhibited a very good group, in which among other fine Odontoglossums, O. crispum "Abner Hassell" stood out as the gem of the collection—fine in form and heavily blotched; O. c. guttatum, Southgate variety, was also good. The collection of Cattleya Mossiae and other Cattleyas was fine; Cymbidium Lowianum concolor, was very pretty. There were also a fine Cypripedium x Gertrude Hollington, C. x villosoneivum, and C. Mastersianum. The group was brightened by showy Masdevallias and Miltonia vexillaria.

Another meritorious exhibit from an amateur collection was a remarkable group of about forty fine forms of Odontoglossums from J. LEEMANN, Esq., West Bank House, Heaton Mersey (gr., Mr. A. Edge), including many fine forms of O. crispum and O. x Adrianae. Amongst the most remarkable were O. crispum Constance Leemann, a pretty pure white, with a clear yellow crest, and occasional yellow spot, as in O. c. xanthotes; O. c. Goliath, very large, and with fine brown blotches; O. c. Mignon, with purple spotting; O. c. New Queen, O. c. Bijou, and O. c. Coquette, all good and distinct. O. x Wilkeanum New King, a fine white profusely blotched variety; O. x Adrianae Lindenæ, and O. x A. Imperator, handsomely blotched varieties of distinct features; and O. Pescatorei Lindenæ, with a peculiar violet marking on the sepals.

The Hon. WALTER ROTHSCHILD, M.P., showed Lælio-Cattleya x Dido (C. Skinneri x L. cinnabarina), with yellow-tinted rose flowers, and an orange and yellow hybrid with showy flowers, reputed to be L. cinnabarina crossed with x C. aurea.

J. RUTHERFORD, Esq., showed the pretty Odontoglossum crispum deliciosum, and Lælia purpurata "Charlotte."

W. THOMPSON, Esq. (gr., Mr. W. Stevens), showed the large white O. longtossium crispum Hebe.

Captain HOLFORD, Westonbirt (gr., Mr. A. Chapman), sent Odontoglossum crispum Ian, a fine white with purple spots, and O. x Adrianae "Mrs. Menzies," a very handsomely-spotted form.

ELIJAH ASHWORTH, Esq. (gr., Mr. Holbrook), sent a fine form of Odontoglossum x Andersonianum, with highly-developed lip.

REGINALD YOUNG, Esq., Liverpool (gr., Mr. Poyntz), showed Cypripedium x Youngie (bellatulum ♀, Hookeræ voluteanum ♂), a pretty purple tinted flower.

Col. SHIPWAY, Chiswick, showed Odontoglossum x Wilkeanum.

CONTINENTAL EXHIBITS.

M. FLORENT CLAES, Etterbeek, Brussels, showed a very interesting group of Odontoglossums, showing great variation in the form of the flowers and in the colour and disposition of the spotting. Of O. triumphans two were remarkable, viz., O. t. Lighthouse, very dark brown with yellow tips, and O. t. album Claesianum (of which only the spike was shown), a variety with white ground with a suspicion of O. x Loochristiense about it, but nevertheless very distinct. Other remarkable kinds were O. x Andersonianum etterbeekianum, large cream-white, finely spotted; O. x Adrianae "Luminous," bright yellow, spotted with brown; and other very fine O. x Adrianae, O. crispum virginale, A. x Coradinei Madouxianum, &c.

Messrs. JANSSENS & PUTZYS, Antwerp, showed a good group of Odontoglossums, in which were a fine O. Hunnewellianum, good O. triumphans, O. x Adrianae, and a grand O. x Ruckerianum superbum.

M. A. A. PEETERS, St. Gilles, Brussels, showed Odontoglossum x Adrianae mirabile, a flower with a fine white ground, with dark spots; O. x Rolfeæ ardentissimum, and O. x R. opium, both fine; O. crispum "Queen Victoria," a grand heavily blotched form; and Cattleya x Kerchovanum

(Schilleriana × Schofieldiana), with slender pseudo-bulbs, and flowers nearly resembling those of *C. Schilleriana*.

M. JULES HYE DE CROM, Ghent (gr., Mr. Coen), showed *Odontoglossum crispum* *Idolæ*, a very pretty form, and other varieties.

M. LUCIEN LINDEN, l'Horticole Coloniale, Brussels, showed a fine lot of their large flowered *Phalenopsis amabilis* *Borneensis*, set up with their new orange-scarlet *Hemanthus*, elsewhere alluded to.

Awards.

FIRST-CLASS CERTIFICATES.

Odontoglossum crispum "Annie," from H. T. PITT, Esq., Rosslyn, Stamford Hill (gr., Mr. Thurgood).—One in the front rank of blotched varieties of *O. crispum*. Flowers large, white, tinged with purple, and heavily blotched with dark claret-purple.

Odontoglossum × *Wilckeanum* "Golden Queen," from W. THOMPSON, Esq., Stone, Staffordshire (gr., Mr. W. Stevens).—A noble flower, previously given an Award of Merit as *O. crispum* "Golden Queen." Flowers very large, pale yellow, heavily blotched with brown. The plant was grandly grown and flowered, and the grower was voted a Cultural Commendation.

Laelio-Cattleya × *Edgar Wigan* (L.-C. × *Aphrodite* × *L. Digbyana*), from Sir FREDERICK WIGAN, Bart. (gr., Mr. W. H. Young).—The finest of the *L. Digbyana* crosses. Flowers like those of L.-C. × *Digbyana*-*Mossie*, but larger; bluish-white freckled with lilac; base of lip purple with yellowish lines passing into the pale yellow disc; front rose-purple, lined.

AWARDS OF MERIT.

Odontoglossum × *Adriana Lindenæ*, from J. LEEMANN, Esq., Heaton Mersey (gr., Mr. A. Edge).—A very distinct white flower, with dark chocolate markings.

Odontoglossum crispum "The Nizam," from J. LEEMANN, Esq. Flower large, tinged with rose-purple, and finely spotted with reddish-brown.

Odontoglossum crispum *Abner Hassell*, from Messrs. STANLEY, ASHTON & Co.—A grand flower, very finely blotched. Shape excellent.

Cattleya Mendeli gigantea, from H. LITTLE, Esq., Barons-halt, Twickenham (gr., Mr. Howard).—A noble, light-coloured flower, with extraordinarily developed lip.

Odontoglossum crispum *Captain Houken*, from M. FL. CLAES, Brussels.—Flower good, white with a purplish tinge, and clusters of claret-purple spots on the segments.

Laelio-Cattleya × *Ivernia* (L.-C. × *callistoglossa* × *L. tenebrosa*).—A pretty flower with rose veining; lip elongated and crimped, tinged with dark rose.

Cattleya Mossie dulcis, from Sir F. WIGAN, Bart. (gr., Mr. W. H. Young).—A grand, rose-tinted flower, with extraordinary lip, orange in the centre, and rich rose-crimson in front, which is finely crimped.

Cattleya Mendeli "Mrs. Tunstall," from Messrs. HUGH LOW & Co.—A charmingly delicate, nearly white form, with a ruby-purple blotch in the centre of the lip.

BOTANICAL CERTIFICATE.

Cypripedium guttatum, from H. J. ELWES, Esq., Colesborne.—A pretty little gem with white flowers, quaintly marked with purple.

Floral Committee.

Present: W. Marshall, Esq., in the chair; with Messrs. J. Jennings, J. F. McLeod, W. Howe, C. J. Salter, E. T. Cook, J. H. Pitt, W. Bain, Harry Turner, G. Paul, R. W. Ker, C. T. Drury, H. B. May, H. J. Jones, E. Molyneux, H. J. Cutbush, G. Reuthe, W. J. James, W. P. Thomson, C. Jeffries, C. Black, E. H. Jenkins, C. Dixon, C. R. Fielder, Rev. F. Page Roberts, and S. A. de Graaff (visitor).

ROSES

were exhibited largely, but all of them were, of course, from the Rose-house, the date being too early in the season for out-of-door blooms.

Mr. CHAS. TURNER, Royal Nurseries, Slough, occupied his usual position at the end of the Orchid-tent; and Messrs. W. PAUL & SON faced him at one side as heretofore. Mr. TURNER'S Roses were afforded the greater part of the space allotted him, and were flanked on either side by *Pelargoniums*. The Roses consisted of a group of dwarf-trained plants of large dimensions, with a row of tall standards behind them, most of the latter being of Mr. TURNER'S world-renowned variety *Crimson Rambler*. Amongst the dwarf plants were some of the most popular exhibition varieties, as *La France*, *Mrs. John Laing*, *Souvenir de M. Eugène Verdier*, *L'Innocence*, *Spenser*, *Mrs. R. G. Sharman Crawford*, *Merveille de Lyon*, *Caroline Kuster*, *Ulrich Brunner*, &c., most of which were exceptional instances of good cultivation.

Messrs. W. PAUL & SON, Waltham Cross Nurseries, Herts, made a very attractive exhibit of Roses in pots, faced with a number of boxes containing cut blooms. The pot Roses consisted of standard and dwarf trees interspersed one with the other, which prevented any appearance of strained formality. Amongst the standard trees were *H. T. Marquise*

Litta, a new Rose of very distinct colour; *Maréchal Niel*, *Souvenir de Catherine Guillot*, *Corunna*, one of Messrs. W. Paul & Son's fine Teas; *Madame Abel Chatenay*, *Hon. Edith Gifford*, and the lovely *Madame Cusin*. Amongst the dwarf plants were excellent specimens of several of Messrs. Paul's home-raised Roses, including *Duchess of Albany* (H. T.), *Crimson Queen* (H. P.), *Spenser* (H. P.), *Blushing Bride* (H. T.), a very fine Rose of delicate, but warm pink colour; *Star of Waltham* (H. P.), *Aurora* (H. T.), &c.; and some of the most popular exhibition varieties of other raisers were represented. Amongst the decorative Roses we must mention *Rosa Polyantha Leuchtstern*, with single flowers about 2 inches across, pink at the margin, with a white centre; *Soleil d'Or*, a H. P., obtained from a cross between *Persian Yellow* and *Antoine Ducher*, having double flowers 4 inches across, of very deep apricot colour, very distinct; *Pink Roamer*, a delightful hybrid *Wichuriana* pillar Rose, pink, with white centre; *Claire Jacquier*, &c. There were fine cut blooms of many varieties.

Messrs. GEO. PAUL & SONS, The Old Nurseries, Cheshunt, furnished one of the corners in the large Orchid tent with an exhibit of Rose-trees in pots, inclusive of standard and dwarf trees, which were arranged very tastefully, and had a very charming effect. The standards, no less than the dwarf plants, were perfect examples of good cultivation, such specimens as H.P. Rev. Alan Cheales are seldom seen. Among the dwarfs were noticed H.T., *Mrs. W. J. Grant*; T., *Beauté Inconstante*; T., *Queen of Sweden*, white, with yellow centre; H.T., *Lady Battersea*; several seedling Tea varieties of merit; H.P., *William Warden*; H.T., *Liberty*, a variety of exceedingly bright colour; H.P., *François Levet*. Of the decorative varieties, there were fine plants of *Polyantha Leuchtstern* (N.), *Allister Stella Gray*, *Psyche*, and others.

Messrs. FRANK CANT & Co., Braiswick Nurseries, Colchester, exhibited a group of Roses in pots, the individual plants of which were smaller than those already noticed. Among the great number of varieties shown were observed *Ethel Brownlow*, of which there was a magnificent exhibition bloom; *Killarney*, a beautiful pink Rose; *White Maman Cochet*, *Mrs. John Laing*, *Tea Lady Roberts*, new, rich apricot coloured, very pretty in the partially-opened bud stage; *Mrs. Ed. Mawley*, a new climbing Rose; *Gruss an Teplitz*, deep crimson; *L'Innocence*, *Pink Wichuriana*, and a number of *Polyantha* and other decorative varieties.

The Moss Roses were shown grandly by Lord ROTHSCHILD, Tring Park (gr., Mr. Hill), who had quite a large group of plants in pots. The plants were staged on a table, in rows according to the variety. Around the group was a row of deep rose-coloured *Little Gem*; then *Reine Blanche*, double white, very sweet-scented; next, *Common Moss*, pink; and in the centre a panel, as it were, of *Henri Martin*, deep magenta or crimson. This exhibit was one of much novelty, and evidenced very successful cultivation.

Mr. RUMSEY, Joyning's Nursery, Waltham Cross, Herts, exhibited a number of boxes containing cut blooms, the varieties *Maréchal Niel* and *Niphetos* being most largely represented, but there were single specimens of very many varieties.

Mr. GEORGE MOUNT, of Canterbury, exhibited a few plants in pots of the variety *Crimson Rambler*, and a nice collection of blooms of many varieties, particularly *Ulrich Brunner*, *Caroline Testout*, *Maréchal Niel*, &c.

A collection of Roses in pots was shown by C. AUBREY WATTS, Esq., 30, Mark Lane, E.C. This was a small group, but the plants were well cultivated.

CLEMATIS.

Messrs. RICHARD SMITH & Co., Worcester, made a grand exhibit of Clematis in pots, including about thirty specimens some 3 feet high, and as much through, such large flowered varieties as *Marie Lefebvre*, bearing from twenty to thirty blooms upon each plant. One of the most distinct varieties, and the richest coloured, was named *La France*, the blooms being large, and of a rich purple colour; *Lady Caroline Neville*, pale lilac; *Mrs. George Jackman*, white, with brownish stamens; *Fairy Queen*, white; *Marie Van Houtte*, white; *Sensation*, lilac coloured; *Excelsior*, deeper in tint than the last named variety; *Marcel Moser*, a very pretty tinted variety, with exceptionally deeply tinted stamens, were amongst the prettiest of the single or semi-double varieties; but there were coloured and white double flowered varieties also.

Messrs. GEO. JACKMAN & SON, Woking Nursery, Surrey, exhibited a fine group of Clematis in pots, including rather more variety than some, because the coccinea hybrids were represented finely, as well as the larger flowered varieties. Of the latter selection, *King Edward VII.*, *Fairy Queen*, *Princess of Wales*, *Madame Van Houtte*, *Mrs. Hope*, *Countess of Lovelace* (double), *Beauty of Worcester* (double), were the best. Of the coccinea type were *Countess of Onslow*, *Admiration*, *Grace Darling*, *Sir Trevor Lawrence*, *Duchess of York*, and *Coccinea* (type).

FERNS.

These were not quite so numerous as usual, the only new variety being from M. Linden, *Compteris Brazzaiana*, a remark-

ably distinct Fern, with long bipinnate fronds, narrow at the base, broad across the middle, and tapering off to a narrow point; barren pinne, oval or oblong, and simple; fertile pinne distinctly lobed. It has the appearance of making a very large plant, but of rather soft texture.

Messrs. J. HILL & SONS, of Lower Edmonton, had one of the prettiest groups we have seen, made up entirely of choice material, of *Adiantums curvatum*, *peruvianum*, *Hendersoni* tinctum, with its pretty rosy-tinted fronds; and the old, though still rare, *A. reniforme*. *Davallias* included *A. aculeata*, a distinct species, with a scandent habit and spiny stems (or stipes); *Assamica*, with spreading scaly rhizomes, and differing from most of this section in having fronds of nearly equal width instead of triangular; *Solida*, *Fijiensis*, *tenuifolia* *Veitchii*, also the ordinary form of *tenuifolia* *stricta*, in fine form; and *repens*. Of *Pteris*, *Childsii*, one of the most beautiful of the *Cretica* varieties; *P. scaberula*, *P. geraniifolia*, *P. longiflora* *Mariesii*, *P. geraniifolia*, and others. Of *Platynerium*, *Willinckii*, *æthiopicum*, *grande*, and *Alcicorne Halli* were conspicuous. *Leucostegia immersa*: a very fine specimen of this occupied a pedestal in the centre of the group, and was very effective. *Anemia rotundifolia*, *Litobrochia vespertilionis*, *Onychium auratum*, *Lomaria attenuata*, *Alsophila paleolata*, a very distinct Tree Fern, with a rather slender stem and large, spreading fronds; *Gleichenia semivestita*, *Pellia rotundifolia* and *P. calomelanos*, and the true form of *Lygodium scandens* in fine form, showing it to be equal to *L. japonica*, which is most generally grown under the name of scandens. Many other beautiful things were also included in this interesting group.

Mr. L. J. CHING, of the Crescent Nursery, Forty Hill, put up a small but very pretty group of fresh, healthy young plants, which included *Adiantum Farleyense*, *Pteris tricolor*, *P. blaurita argentea*, *P. cretica* *Drinkwateri*, a fine variety of the major type, and a variety of other useful sorts.

Mr. H. B. MAY, in a miscellaneous group, included some very fine Ferns, among which was a noble specimen of the beautiful *Polypodium Mayi*. It will be remembered that this was a great attraction a few years ago, when it received a First-class Certificate; but it has not yet proved fertile, and is rarely seen. *Pteris cretica albo-lineata* *Alexandré*, one of the finest additions to this useful type, which lately received an award from the Floral Committee; *Asplenium Mayi*, another good variety of Mr. May's raising; *Polypodium glaucum cristatum*, *Gymnogramma chrysophylla* *Reginæ*, a fine golden Fern; a splendid specimen of *Platynerium grande*, *Davallia retusa*, and some fine specimens of *D. fijiensis*; also some good crested varieties of *Athyrium filix-femina*, and *Scolopendrium vulgare*, with other good Ferns.

RHODODENDRONS.

(See also under Miscellaneous.)

Messrs. R. & G. CUTHBERT, Southgate Nurseries, Middlesex, who show these hardy Rhododendrons (*Azalea mollis*, &c.), so well throughout the season, and have made an especial effort at the Temple Show for several years past, had this season a different position allotted them. Instead of facing one of the entrances to one of the smaller tents, their exhibit was staged near to one end of the large marquee in which the Orchids are shown, and was a neighbour to the refreshing-looking Peach and Nectarine trees of Messrs. Rivers & Son. The wealth of bloom that Messrs. Cuthbert had compressed into their group was marvellous, and though the arrangement was not quite what the firm had intended, the best was made of the amount of space available. That incomparable rich yellow variety, *Anthony Koster*, the form of which, as well as the tint of colour, is quite superior, was very well shown, and it contrasted most effectively with a large dense patch of winey-red colour made by the variety *Alphonse Lavallée*, one of the most attractive of the red-coloured ones. A seedling at the back of this colour, buff yellow, with reddish marking near the margins of the petals, was quite worthy of remark, as were *M. Koster*, very large flowers, coloured light red; *J. C. Van Tol*, *Arthur de Warrelles*, *Admirable*, *General Vetter*, *Lutea major*, *Sebastopol*, &c. The habit of growth of some of the varieties is much freer and more desirable than that of others, and *Anthony Koster* is one of these. The standard-trained plants have their use for planting in the garden, and in an exhibition group as this they are invaluable. *R. ponticum*, and the type known as "rusticum," with double flowers, were all represented by many first-class varieties.

Mr. CHAS. TURNER, Royal Nurseries, Slough, had a group of moderate-sized plants of varieties of *Azalea indica*, some of them being varieties that at present are little known in gardens. Some of the more attractive were *Esgebrechtii* (double), deep red colour; *Franz Szirövi* (double), very pale pink colour, with reddish centre; *Princess Victoria* (double), bright violet-red; *Madame H. Seidel* (double), very large pure white flowers, with very occasional streak or splash of vivid red colour; and the following single ones, *Roi de Hollande*, red; *Comte de Chambord*, pink, considerable colour on upper petal; *Hexe*, rather small, well-formed flower of rich red colour; *Schnee*, very large pure white; *Grandis*, red, &c.

HIPPEASTRUMS.

Captain HOLFORD, Westonbirt, Gloucestershire (gr., Mr. A. Chapman), showed about fifty plants in much variety of colour, and of form; especially good in form being Merlin and Lavengro, two dark crimson varieties of very regular form, and even outline; Lois is a larger flower than either, with a white ground, and white uncoloured band $\frac{1}{2}$ inch wide running up each segment, the rest of the surface being lined and chequered with crimson, and the base light green. The remainder were unnamed, and consisted of varieties choice in colour in most instances, and of refined form. The exhibit was an uncommonly good one for so late a date.

CALADIUMS.

Messrs. J. VEITCH & SONS, LTD., Royal Exotic Nurseries, Chelsea, &c., exhibited a large bank-like group, consisting chiefly of Caladiums, interspersed with Marantas, Tillandsias, Codieums, Richardias, with yellow spathes; Alocasias, Orchids, Nidulariums, Asparagus, Begonias, Phrynium variegatum, &c. This mixture of plants, less brilliantly coloured than Caladiums, had a good effect. The finest and largest plants of the latter were C. Triomphe de Comte, green, with crimson coloured ribs; Silver Cloud, white, with green spots; Pantia Ralli, bronze and crimson with white flecking; Roncador, pink, with narrow green veins; Louis A. Van Houtte, crimson; Mdle. Schmidt, bright crimson, with an irregular green margin; Madame John Box, light red, with green margin; Baron A. de Rothschild, a leaf of lurid red, with pink spots; Rose Laing, of light rose colour, with cream and green edge; Candidum, Oriflamme, very telling crimson and bronze leaf. In smaller plants of new varieties, in some cases, we noted Ruth Luther, Comtesse de Brosse, Lilie Burke, Mrs. J. D. Veitch, Golden Queen, &c. There was a perfect example of Tillandsia fenestralis, Codieum "Sunshine," Dracaena Alexander Laing, D. The Queen, a bright narrow leaved variety, with recurved leaves; D. Exquisite, young leaves pink, green, and creamy-white, the older ones green; the spotted D. Godeffiana; Cyanophyllum magnificum, grown better than it is usually seen; Alocasia argyrea, Anthurium crystallinum, the handsome Leea amabilis, Gymnogramma schizophyllum gloriosum, an exquisite species. The group was filled in with Adiantum capillus-veneris.

Messrs. PEED & SON, Nurseries, West Norwood, showed Caladiums in great variety, new and old, the latter being, of course, the bigger plants, and all were remarkable for their general dwarf character and good culture. We remarked the following varieties:—Mercedes d'Argent, Leonard Bause, Rose Laing, Duchess of Fife, Silver Cloud, Sir Henry Irving, having leaves of light ground colour; Triomphe de Comte, Roncador, Marquis of Camden, Oriflamme, John Peed, Mrs. H. Veitch, having leaves of various shades of crimson; and the best of the variegated-leaved varieties were Chas. Dahle, Pavis de Chavannes, Miracema, Lord Rosebery, Marquis d'Albertas, and W. Pfitzer.

CACTACEOUS PLANTS.

Messrs. J. VEITCH & SONS, LTD., showed in another tent the largest group they have yet shown of hybrid Phyllocactus, making a beautiful display in regard to variety of colouring, which ranged from white and light rose to deep crimson. A few were under name, as Favourite, salmon-pink; Adonis, tender mauve; Jessica, similar to the last, but of a paler tint; Beethoven, pale purplish-rose; Gem, rosy-crimson; J. T. Peacock Improved, of a reddish-purple tint; Cyrene similar to the last in regard to tint, but larger; Epirus, light rose; Virginalis and Vesta, white; Hecla, scarlet coloured, with petals that incurve; Robert Watson and Plato, beautiful purplish-crimson; Phyllanthoides, a diminutive flower of a peach colour, and very free to flower; and Agathe, salmon-pink.

Messrs. H. CANNELL & SONS, Swanley, Kent, exhibited great numbers of Melon Cactus, Opuntias, Cereus, Echinocactus, Mammillaria, some species being of great variety. There were remarked one ponderous and handsome example of Echinocactus Grusoni, eighteen inches in lateral diameter, and two of twelve inches in diameter, all three being perfect specimens of their kind. A minute example of Cereus flagelliformis, having a striking resemblance to "Mr. Punch's physiognomy," was shown in a tiny Japanese vase.

PITCHER PLANTS.

R. I. MEASURES, Esq., Flodden Road, Camberwell (gr., Mr. H. J. Chapman), showed a well-grown, and representative collection of insectivorous plants including Nepenthes mixta, a plant with three pitchers, Sarracenia Toliaana, S. Drummondii, and S. D. alba, S. Melanorhoda, with peculiarly curved pitchers; S. Chelsoni, S. Swainiana (?), with prettily veined pitchers, &c. The smaller Droseras, and Cephalotus, protected against dust and dryness by bell glasses, formed a portion of the exhibit of great interest to many of the visitors.

HEMANTHUS.

M. LUCIEN LINDEN, L'Horticole Coloniale, Brussels, staged a group of Hemanthus plants in variety, each plant furnished

with one head of bloom. We remarked H. mirabilis, the subject of our Supplementary figure this week; H. Diadema, H. Fascinator, and others not furnished with names, and having a general resemblance to each other. The leaf development was unusually robust on most of the plants.

FLORISTS' FLOWERS.

BEGONIAS.

None will dispute the opinion that by far the finest show of these flowers came from Mr. T. S. WARE, of Feltham, Middlesex. Indeed, at no time has there been seen a grander lot of doubles than he had. The plants were compact and wonderfully flowered, many of the blooms showing form of the highest merit. As for variety and coloration nothing could be richer in these plants. If the softer tints were lovely, the deep hues were brilliant. It must be in Begonia culture difficult to excel this splendid group. Some of the edged flowers were singularly lovely, especially Mrs. Robert Sadler, white, flushed pink, heavily edged rose; Samuel Pope, white, rose edged; Imbricata, rosy scarlet, shading to white; Lord Roberts, white, intensely flushed, and edged rosy-red. There were brilliant crimsons, scarlets, roses, yellows, pinks, whites, and many intermediate hues.

Messrs. J. LAING & SONS, Forest Hill, showed a fine bank of singles, many of the flowers being of great size and brilliant in colour. Some showed fringed edges, and one the crested form, which is of so curious a character. The doubles staged were not yet fully developed, but showed great promise. The firm also had good Gloxinias and Streptocarpus.

Mr. H. J. JONES, Lewisham, had good single Begonias in his large plant group. Mr. J. FORBES, of Hawick, had a pretty group of his new white Gloire de Lorraine, which he has named Caledonia, a few plants of the pink form being intermixed for contrast. This is evidently a charming addition to winter-flowering Begonias.

PELARGONIUMS.

Mr. JONES had a neat collection of large-flowered varieties on his table, young plants profusely flowered. Mr. W. J. GODFREY sent from Exmouth baskets of French varieties: Emanuel Lias, rose and white; President Faure, rosy red, and W. H. Godfrey, crimson and white, being amongst the most floriferous; also a yellow self bedding Tropaeolum, said to be sweet-scented. This was named Exmouth Glory.

Messrs. H. CANNELL & SONS showed the deep scarlet zonal sport from H. Jacoby which has the habit of West Brighton Gem. This is named Edward the Seventh. Mr. H. B. MAY had in his group some finely flowered scarlet and pink Zonals that gave rich colouring.

That the old art of growing fine specimens of large-flowered or show and fancy Pelargoniums still exists at Slough, was made evident by the fine plants, profusely flowered, found in one corner of the large tent, forming a portion of Mr. CHARLES TURNER's great group of show varieties. Very fine were Maid of Honour, Reschitte, Mystery, Rosetta, Maggie, Edward Perkins, and Mrs. Coombs; whilst of fancy, amongst others, Ellen Beck, Princess Teck, and The Shah were prominent. Mr. TURNER does well to keep these and some other beautiful florists' varieties before the public, lest they forget them.

CALCEOLARIAS

of the annual order were very plentiful. Mr. J. R. BOX, Croydon, had a good bank of these plants, admirably grown, very clean. Spotted forms here largely predominated.

A. MEYERS, Esq., Epsom (gr. Mr. J. BUSS), showed a neat, small group of well-flowered plants.

Messrs. WEBB & SONS, Wordsley, Stourbridge, had a large group of these plants, showing a varied spotted and self-coloured strain, in pots of medium size, that had travelled well so far. A remarkably fine collection came from Messrs. SUTTON & SONS, the plants ranging from 18 to 20 inches across, very massive, and finely grown, yet quite compact, blooms of great size, many quite 3 inches across, the whole showing remarkable variation in markings and colouring, and presented a brilliant display. It was probably one of the best groups of these plants yet seen at these exhibitions.

Messrs. JAS. CARTER & CO. had a good group of large-flowered varieties; but without doubt interest centred on their Tom Thumb and Pigmy sections. The latter were presented in little plants 8 inches in height, quite compact, full of tiny blooms, diversely coloured, though chiefly light grounds speckled. It is a quaint and undoubtedly pigmy strain. Rather more attractive were the Tom Thumb varieties, these being rather taller and slightly larger as well as richer bloomed. Small as were the plants in these sections it could not be said that any were of disproportionate dimensions.

CARNATIONS.

The above firm had good plants of Cecilia, yellow, Lady Hermione, rose, and other varieties.

Messrs. HUGH LOW & CO., Enfield, staged a good batch of Malmalson Carnations in various sized pots, also the famous Mrs. T. W. Lawson, rose; and Mrs. Martin Smith, Princess of Wales, Princess May, and others having fine blooms.

Mr. H. T. DIXON, Hailsham, Sussex, showed a nice group in pots of Cecilia, Robert Owen, Duke of Alva, Lady Hermione, Guinevere, Trumpeter, and others, including Malmalson varieties.

From Hillingdon Court, Uxbridge, occupying a prominent position in the great tent, came a fine group of Carnations sent by Lord HILLINGDON (gr., Mr. A. M. Allan). There were blush, pink, red, and scarlet Malmalsons. Many very large plants, finely flowered; also at the back a few other fine varieties unnamed. This group merited high praise for cultivation.

Messrs. WM. CUTBUSH & SONS, Highgate, had as usual their corner in the large tent, using Carnations largely in their most attractive group. These were arranged in small mounds, standing out of a base of diverse and dwarf Malmalsons, all superbly flowered. Very fine were Cecilia, Sir Hector McDonald, white edged and striped red; Herbert J. Cutbush, intense scarlet; Germania, yellow; Queen of the Buffs, Wm. Robinson, Fanny Willert, Lady Nimie, and Mrs. Ferguson. This superb collection was backed by Palms, yellow Aums, Clematis, Roses, Peonies, Spireas, and various hard-wooded plants, and faced with Ferns, Lilies of the Valley, dwarf Heather, &c.

CANNAS.

Messrs. CANNELL were the only exhibitors of these showy flowers. Amongst the group, which made a very effective appearance, were Menelik, Alex Billard, Hans Hardmüller, M. Florent Pawels, Martha Washington, Berthine Bunnett, President McKinley, Elizabeth Hose, and others, all finely flowered.

GLOXINIAS.

Messrs. J. G. UPTON, Irlam, Manchester, staged some very fine flowered plants, the blooms being of great size, perfect in form, and beautifully marked.

Messrs. J. LAING & SONS staged some nice varieties in their group.

Messrs. WEBB & SONS, Wordsley, Staffs, made a smaller show of Gloxinias, consisting mostly of the crimson self, "Stanley," a few only of other colours being found in the group. "Stanley" has rather small leaves that stand out horizontally, whereas the other varieties had foliage of the so-called crassifolia type.

Messrs. SUTTON & SONS had a big and most attractive bank of these flowers, which, if somewhat crowded owing to space limitation, was still a wonderfully fine one, the flowers very large, superbly formed, and of the most beautiful colours and markings. Near these were remarkably pretty hybrid Columbinas and Nemesias in singularly rich colours and finely flowered.

HARDY HERBACEOUS PLANTS.

The interest in the hardy plants was well maintained, and indeed the old notion of lifting from the ground and bringing drooping and worn-out examples, seems well nigh dispelled. We noted too, with pleasure, that many things were grown with care, a thing not always done.

Foremost, in entering the tent, an extensive group from Messrs. BARR & SONS, Covent Garden, attracted attention, and here we noted huge displays of Peonies, of oriental Poppies, Globe flowers, the towering Eremuri with densely-flowered spikes of white and rose-pink, several feet long. Of these, E. robustus Elwesianus was excellent. The Darwin Tulips, ever a host in themselves, were of exceptional merit, the flowers large, solid, well formed, of these we noted Samuel Barlow, Dr. Hardy, and Annie McGregor, as very fine. The early Gladioli were also of much interest, such as Early Blush, being very fine in the mass. Among the smaller alpine, the Phloxes, double-yellow Alyssum, double-white Arabis, very good and free, and pure, and the hardy Cypripediums were of interest. The double black Wallflower was also noteworthy, as being in all probability the true old sort. Lewisia Tweediei is a fine plant of doubtful hardiness, the flowers flesh or buff in tone with an external rose tint.

The GUILDFORD HARDY PLANT CO., as is their wont, set up a prettily arranged bit of rockwork, with which many beautiful alpine and other hardy plants were associated. In this we noted grouped in the low-lying portion such things as Gentians, the pretty vernal kind in particular, and such things as Androsaces, Ramondias, the several alpine Phloxes in pleasing shades, mossy Saxifragas, as, e.g., S. Rhei, S. atropurpurea, the Cobweb Sempervivums in their rugged tufts, Primula Munroi, Heuchera sanguinea splendens, Trilliums, the rather rare-flowering Oursia coccinea, with scarlet tubular flowers, and many more. It was noticeable, too, how well the rockery was furnished, and how much detail in general was studied by the right placing of the plants. Shrubs and Conifers filled in the background of what was virtually a miniature rock-garden nicely done.

Another exhibit of cork imitating rockwork came from Messrs. J. CHEAL & SONS, Crawley, and here again an attempt was made in a similar direction. For the most part small alpine of the free-growing kinds were abundant, and these were augmented by Pansies and Violas, and other such showy subjects. We think, however, a large amount of greenery may have been employed with advantage.

From Mr. AMOS PERRY, Winchmore Hill, came a fine lot of fine herbaceous plants, the majority being of the showier class, that should be found in every garden. Poppies of the oriental class were plentiful, as also the beautiful Geum, G. Heldreichi, which was represented by a mass 2 feet across. Irises, too, were very fine, and in particular, I. Korolkowi, of which there were a dozen or more of its fascinating flowers, worthy of special note. *Thalictrum orientale*, with white, plume-like flowers, is a charming plant. A grand mass was the double white *Arabis*, very telling when seen in this way. Of the more rare, the white form of *Polemonium confertum* was very pleasing, and equally so the lovely alpine pink *Dianthus alpinus*, with rose flowers an inch or more across. Of more than passing interest was *Jankea Heldreichi*, with its mauve-blue hooded flowers and its hairy or woolly leaves, that nearly resemble those of the *Ramondia*. This is a gem among alpine, while another good and rare subject is *Lithospermum canescens*, a species with golden flowers, rather freely produced.

From Christchurch, Hants, Mr. MAURICE PRICHARD brought a nice lot of things, in which the *Pyrethrums* were a feature, as showing the earliness of the district; the flesh-coloured Mrs. Munier was very fine. Of other plants, *Centaurea angustifolia rubra* is excellent, and the masses of Iris, *Pæonies*, *Globe-flowers*, and *Orange Globe* in particular, were a show in themselves. Then in *Dodecatheons*, the *Epimediums*, *Gypsophila erastoides*, very neat; alpine *Phloxes*, very charming; *Anthemis aizoon*, with white flowers; *Ranunculus alpestris*, very free; *Oxalis euneaphylla*, with white trusses amid glaucous foliage; not least among the beautiful was *Helianthemum piloselloides*, a charming bit of golden-yellow, with quite miniature leafage that should endear it to all lovers of alpine plants.

In the group from Messrs. WALLACE & CO., Colchester, there was much beauty and variety set up with excellent judgment and taste. For example, the light, airy character of the *Calochorti*, *Ixias*, and *Sparaxis*, all of which were well done in pots, and arranged in conjunction with *Ornithogalum arabicum*, and other things, was very good; then came a plentiful supply of *Lilium rubellum*, having charming rose-coloured flowers (figured in the *Gardeners' Chronicle*, May 28, 1898, p. 335); the ever-welcome Spanish Iris, in much beauty of colouring; many charming *Brodias*, the North American *Cypripediums*, over which the delicate North American *Maidenhair* was very pleasing. The *Lilies*, too, were very good, those of *L. elegans* and allied kinds in particular; not less so were such as *Henryi*, *Hansonii*, the scarlet *tennifolium*. Among a large number of exceptional plants, Stuart's *Columbine* was grand, the rich flowers of *Gerbera splendens* in their richness, as well as size; while masses of alpine *Phloxes*, such as *Vivid*, *Nelsoni*, and others were notable, by reason of their freshness, and the masses of flowers that each carried. Here and there the pretty leafage of the Japan *Acers* infused a gracefulness and lightness, to what was a most charming as well as varied and beautiful group of the best hardy things of the day. In this group was included the dwarf Iris named *I. flavissima*, figured on p. 337, and remarkable for its pretty yellow flowers.

Messrs. GEO. JACKMAN & SONS, Woking, also had a nicely arranged group of good things, the plants well grown, and in good flower. Very pretty was *Eranthis speciosa rosea*; *Incarvillea Delavayi*, with drooping *Gloxinia*-like flowers, very fine; *Onosma tauricum*, with golden flowers; *Viola pedata*, very beautiful; *Cyclamen repandum*, *Primula Sikkimensis*, with drooping yellow flowers; many beautiful *Trilliums*, *Orchis foliosa*, *Cypripediums* in variety, *Saxifraga MacNabiana*, prettily spotted with red; alpine *Phloxes*, in variety; *Globe Flowers*, and such things were all in good condition. In this group *Salvia rigens*, a new species with blue flowers on lax stems 3 feet high, is rather promising.

Messrs. ROBERT VEITCH & CO., had quite an interesting lot of alpine, among which we noted *Pentstemon Hallii*, with a blue flower, with the habit of *P. procerus*; *Androsace Chumbyensis*, a lovely rose shade, and very free; *Myosotidium nobile*, *Polygonum Balduanum*, *Edwardia grandiflora* (golden-yellow), and the rare *Jupa salicifolia*; this has orange-scarlet flowers. A pretty alpine pink is *Dianthus inodorus nanus*, very dwarf, indeed almost minute.

Mr. T. S. WARE, Feltham, had a rich and extensive group of the best things. Bold telling spikes of *Eremuri* above all else showing these noble things to perfection. There were also pans of *Primula Sieboldii* in much variety, very pleasing in many shades; Irises in plenty, including the lovely cushion Irises, as *Susiana*, *paradoxa*, and others; beautiful hardy *Lady's Slipper Orchids*, alpine *Phloxes*, *Vernal Gentian*, a mass of colour of its inimitable blue flowers. *Ramondias*,

Primula obconica kermesiana, a rich rose shade, and flowers of large size; *Sikkim Primroses*, *Tree Pæonies*, very fine. *Primula involucreta*, and the modest little *Silene acaulis grandiflora* studded with flowers.

Messrs. R. SMITH & CO., Worcester, also had hardy things of the herbaceous kinds, in which *Thalictrums*, *Trollius*, *Lupinus*, *Irises*, *Thermopsis montana*, *Oriental Poppies*, *Oenothera speciosa*, &c.

The Misses HOPKINS, Knutsford, Cheshire, set up alpine mostly of the smaller class, with the mossy *Saxifragas*, pink *Daisies*, and such like, in a bank of moss giving a very pretty effect.

From the Old Nurseries, Cheshunt, Messrs. PAUL & SON had a pretty lot of alpine, mostly in boxes, and among them we noticed *Phlox amœna*, *P. canadensis*, *Saxifraga Rhei*, *Arnebia echioides*, *Gerbera Jamesoni*, *Heuchera hybrida*, pale rose; *Trollius* and many others.

Messrs. CARTER, Holborn, arranged on a small rockery a collection of the smaller hardy alpine, in quite small pocket-like compartments, and in this way *Phloxes*, mossy and crusted *Saxifragas*, *Androsaces*, *Gentians*, *Iberis*, *Aubrietias*, *Hutchinsia alpina*, very pretty, with white flowers; double white *Arabis* were nicely disposed, to show their value in such an arrangement.

Mr. P. PURNELL, Woodlands, Streatham Hill, had a rather extensive lot of the hardy *Sempervivums*, or *Houseleeks*, together with *Sedums* and other plants. In its way the exhibit was rather an exceptional one, and a large number were shown, mostly however of the larger kinds. It was, however, too early in the season for such things to be in flower, though of much interest even in the dormant state of the rosettes.

Flag Irises in the cut state and in considerable variety were contributed by Mr. W. J. CAPARNE, Rohais Guernsey; and a pretty assortment of alpine plants came from Mrs. FARREY, Ingleborough, Lancaster. Prominent in the latter were *Primula formosa*, very pretty; also *Ramondias*, *Gentians*, *Phlox F. F. Wilson*, *Lilium rubellum*; *Arenaria gothica*, a pretty white flowered plant; the charming *Iris cristata*; *Cerastium glaciale*; *Morisia hypogæa*, full of its golden flowers; and the mountain *Lady's Slipper*, *Cypripedium occidentale*. The entire lot being grouped and bedded in moss, completely hiding the pots (First-class Certificate).

CUT FLOWERS.

CARNATIONS were not represented by any special collection, and indeed, scarcely any cut blooms were staged. It is in the mid-season, between the winter and summer flowering varieties, when the *Malmaison* type and its numerous forms are in season; and what there was of this section of Carnations were shown in groups as plants in pots.

HARDY PERENNIALS.—Collections of these formed the staple of what was shown as cut flowers in this division, and if a good proportion of some of the collections had been left at home, the show would have been the gainer. Starting from the east end of the long tent, a collection of cut flowers, which was not wholly formed of perennials, challenged attention. From their nurseries at Stevenage, Messrs. A. W. Young and Co. sent good bunches of *Trollius* Orange Globe and *T. europæus*, and *Lupinus polyphyllus albus*, among perennials; also *Parrot* and late *Tulips* in variety, and some sprays of very pretty *Violas* charmingly fresh. Chief among them *Gerty*, *Kitty Simons*, *Maid of Honour*, *Kitty Bell*, *Curiosity*, various fancy *Pansies*, and some plants of an attractive white-centred blue bedding variety.

Messrs. RICHARD SMITH & CO., nurserymen, Worcester, had a varied collection of hardy flowers, among them *Trollius Astrevedensis*, fine golden-yellow; *Cheiranthus cheiri luteus* (double), *Asphodelus luteus*, *Modiola Munroiana*, *Lathyrus Sibthorpi*, *Iris*, *Pæonies*, *Camassia esculenta*, &c.

Messrs. BARR & SON, King Street, Covent Garden, had *Pæonies*, *Iris*, *Papaver orientale* and *P. nudicaule*, in variety; *Anemones*, *Lupinus Nootkatensis*, hybrid *Aquilegas*, *Saxifraga granulata fl.-pl.*, early-flowering *Gladiolus*, &c.; a very interesting exhibit.

Mr. M. PRICHARD, nurseryman, Christchurch, had, as usual, a choice and instructive exhibit, which comprised *Camassia esculenta*, some fine and striking forms of *Trollius*, *Phl. canadensis*, *Centaurea angustifolia rubra*, *Iris*, and various other things.

Mr. AMOS PERRY, nurseryman, Winchmore Hill, had a very fine collection also. This included many fine novelties among hardy plants, all remarkably well grown. It attracted a great deal of attention.

Mr. G. W. PIPER, Rose Nursery, Uckfield, had a small and select collection, which contained the new crimson H.T. *Liberty*, which appears to possess a good habit of growth; *Sunrise*, Mrs. W. J. Grant, *Kaiserin Augusta Victoria*, *Maman Cochet*, *Perle des Jardins*, and *Bridesmaid*. These were tastefully set up, though the blooms were generally smaller than what has been seen from Mr. Piper earlier in the year.

PÆONIES.—It was probably owing to the lateness of the season that cut *Pæonies* were somewhat sparingly produced

in comparison with what has been the case in previous years. In addition to a collection in pots, Messrs. KELWAY & SON, nurserymen, Langport, had numerous cut blooms. The varieties in pots may be included in this connection. Among the new varieties were *Christine Kelway*, described elsewhere; *Lord Roberts*, also white, but with fimbriated edges to the petals; and *Marie Corelli*, warm pinkish-rose, paling to blush on the petal edges. Others comprised *Miss Beatrice Jones*, a large single white, with a ring of crimson, blotched round the centre; and *Lady Sarah Wilson*, delicate pink, shading to blush, and stained with purple on the base of the petals. Both of these obtained Awards of Merit in 1900. *Sir George White*, shining maroon crimson; *Mrs. Bancroft*, bright soft pink, flushed with a deeper tint at the base; *Countess of Crewe*, pink, shaded with rose, and having a distinct dark flame on each petal; and of the cut blooms there were *Ella C. Stubbs*, a large single white; *Cecil Rhodes*, shaded rosy crimson; *Mark Twain*, maroon-crimson; *Karl Haag*, shining pale purple; and *Brightness*, bright pale scarlet.

CUT SPECIMENS.

In a few instances cut examples of shrubs formed the bulk of the exhibits, with some perennials mixed with them. Messrs. W. H. ROGERS & SON, Red Lodge Nurseries, Southampton, had examples of *Berberis stenophylla*; the double *Furze*, a much more attractive subject than is generally supposed; *Cercis Siliquastrum*, *Andromeda floribunda*, *Magnolia conspicua Soulangiana*, a deep orange *Azalea mollis*, *Pyrus japonica*, *Vaccinium coccineum*, *Ochoysa ternata*, with *Rhododendrons* and sprays of pictorial foliage.

Messrs. V. N. GAUNTLETT & CO., Japan Nurseries, Redruth, exhibited as showing the favourable character of the climate of that portion of the west of England, such subjects as *Embothrium coccineum*, *Cianthus Dampieri*, from a south wall; *Solanum crispum*, and various forms of *Rhododendron*, such as *Roylei*, *Falconeri*, *Thompsoni*, *campylocarpum*, *Standishi*, *Acacia verticillata*, &c.

Messrs. W. PAUL & SONS, nurserymen, Waltham Cross, had an interesting collection of *Lilacs* in bold bunches: the darkest *Souvenir de L. Späth*, *Scipion Cochet*, and *Géant des Batailles*; and following these, *Charles X.*, *La Tour d'Auvergne*, *Condercet*, *Emile Lemoine*, *Dr. Lindley*, *Virginal*, *Madame A. Chateau*, *Madame Casimir Perier*, &c.

Messrs. J. CHEAL & SON, Lowfield Nurseries, Crawley, had examples of cut shrubs, such as *Azalea mollis*, *Berberis*, *Pyrus*, *Aristolochia Siphio*, and a number of pretty sprays of *Violas*.

From C. E. HEATH, Esq., Kitlands, Holmwood, came a number of fine trusses of *Rhododendron Falconeri*, proving an attractive subject.

TULIPS.

Messrs. HOGG & ROBERTSON, nurserymen, Dublin, had a fine and imposing collection of Irish-grown *Tulips*, which comprised several entirely new forms, such as *Marginata*, creamy-white, the petal margins feathery with bright scarlet; *Batalini "Sunrise"*, a brightly marked form; *Miss Jekyll*, white, with purple base; and such as *Darwin's La Tulipe Noire*, a very dark variety; *Moralis*, *Millet*, *Pygmalion*, a fine *Rose* self, with a white base; *Mrs. Cleveland*, blush, flushed with pale rose; and *Gretchen*, a very pleasing pale form; and such *May* flowering varieties as *Mariana*, rich scarlet, with a yellow base; *Ixioides*, described elsewhere, partaking of the character of a glorious pale yellow *Ixia*; *Mrs. Keighley*, *Fairy Queen*, *Picotee*, *Parrot Tulips* in variety, late flowering double, &c. The size of some of the flowers was a remarkable feature in this collection.

Mr. W. BAYLOR HARTLAND, nurseryman, Cork, also had a fine collection of Irish grown *Tulips*, which included *Maxima lutea*, very fine; *Alba coerules*, *Picotee Striata*, *Fairy Queen*, *Maculata*, *Ixioides*, *Spatulata aurantiaca*, *Leghorn Bonnet*, *Sunset*, *Bouton d'Or*, *Nigrella*, *Snowdon*, *York and Lancaster*, *Buonaventura*, &c. Several of the foregoing no doubt represent local names, but all were finely developed.

A very fine and representative collection was staged by Messrs. BARR & SON King Street, Covent Garden, and this included a number of the English florist's *Tulips*, and of these such showy selfs or breeder forms as *Annie McGregor*, *Lady Constance Grosvenor*, *Mabel*, *Lord Derby* and *Kate Connor*; *Rose breeders*, *byblæmen breeder Ashmodens*; and *bizarres*, *Goldfinder*. Then of rectified flowers there were *bizarres*, *Masterpiece*, *Colbert*, *Dr. Hardy*, *Sir J. Paxton*, *Lord Lilford*, *George Hayward*; *roses*, *Annie McGregor* and *Comte de Vergennes*; and *byblæmens*, *Mrs. Jackson*, *Lord Stanley*, and *Talisman*. Of *May-flowering Tulips* there were *La Merville*, *Blushing Bride*, *luteo-pallida*, *Flava*, *Mrs. Moon*, *Rosalind*, *Picotee*, *Parisian Yellow*, &c. Then of the *Darwin* race there were fine representatives of *Margaret*, *Salmon King*, *Zephyr*, *Clara Butt*, *Auber*, *Rev. H. H. D'Ombra*, *Krelage*, *Pygmalion*, *Loveliness*, *White Queen*, and *Virginia*. Of the *parrot* section, *Firefly*, *Crimson Beauty*, *Large Yellow*, and *Mark Graaf*.

(For continuation of Report, see p. 336.)

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THE

Gardeners' Chronicle

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THE ASPARAGUS AS A
DECORATIVE PLANT.

THE English kitchen-garden during the months of summer contains many objects of great beauty—climbing Beans, Globe Artichokes, and the rest—but nothing more graceful than the feathery growth of the edible Asparagus. Indeed, this useful plant is fully as handsome to the eye as it is delicious to the taste; and few pot plants look brighter and more attractive at Christmas than young bushes of the common Asparagus, obtained from seed sown when ripe in the autumn, and “brought on” in a warm greenhouse.

But there are many other species of this genus which are well worth growing for their beautiful foliage and habits. Mr. Baker's “Monograph of Asparagaceae,” contained in the 14th volume of the *Journal of the Linnean Society*, gives a total of ninety-seven species, but only a few of these have become at all well known in England. Most of them are somewhat tender, and can only be grown in this country under glass, but a few are hardy. In his *A Gloucestershire Garden*, Canon Ellacombe says that he grows *Asparagus acutifolius* in the open, though apparently against a protecting wall.

This is an evergreen climber, with short, hard, bristly leaflets, growing to a height of 4 or 5 feet. It is to be seen growing wild and in abundance along the rocky shores of the Mediterranean. Canon Ellacombe also grows in the open the beautiful and vigorous climbing *A. verticillata*, a deciduous species, and the well-known (as a greenhouse plant) *A. medeoloides*. This has long been grown in England, and is described in Mawe's *Universal Gardener*, as well as in Hanbury's *Complete Body of Planting*. Both these authors advise that it be removed to a warm greenhouse in the autumn, in order that it may be in perfection at Christmas-time. Hanbury, in particular, gives a good and interesting description of the plant:—

“The Myrtle-leaved climbing African *Asparagus* admits of two principal varieties, called the Broad-leaved and the Narrow-leaved.

“The root of the Broad-leaved is composed of several oblong, fleshy knobs, which unite at the top. The stalks are weak, climbing, divide into numerous branches, and will rise, if supported, to the height of about 5 feet. The leaves are pinnated and single; the folioles are oval, spear-shaped, pointed, sessile, of a dark but glossy green colour on their upper side, but paler underneath, and are placed alternately along the midrib. The flowers come out from the sides of the branches on short footstalks; they are of a dull white colour, appear in October, and are often succeeded by ripe heart-shaped seeds in the spring.

“The Narrow-leaved sort differs from the other, inasmuch as the stalks are smaller and less branching. The leaves are long, narrow, and of a greyish colour. The flowers are of a greenish-white colour, but are produced like the former; they appear about the same time, and the seeds ripen accordingly. The stalks of both these kinds die to the ground every summer, but fresh ones spring up in the autumn, and continue growing and exhibiting their flowers all the winter.”

Among other kinds which are hardy in warm light soils is the very beautiful *A. Broussonetii*.

One of the first of the greenhouse *Asparaguses* to be introduced into England was *A. retrofractus*, which was brought from the Cape in 1759; but, owing to the fact that it rarely, if ever, flowers here, and can be increased only by the slow process of layering, it never became a popular plant. About 1890 an attempt was made by M. Lemoine to popularise it, and met with some success, for since then it has been more commonly grown. It likes sunlight, but not too much heat, and it also likes plenty of pot-room. If kept in small pots, however, pretty little plants for table decoration may be obtained. Grown liberally, *A. retrofractus* is a tall, woody species, with thin leaves, upwards of 2 inches in length, produced in tufts from the branches. The crooked stems are usually covered with a grey powder, which gives a characteristic appearance to the plant.

Another species long introduced from the Cape is *A. scandens*, which climbs to a height of 10 or more feet, the whole plant being a dense mass of rich green foliage. The curved leaves somewhat resemble those of *A. Sprengeri* in texture, but, being arranged in one plane, give somewhat the appearance of a coarse variety of *A. plumosus*. *A. scandens* is increased by division, rarely ripening seeds in England—hence its comparative rarity. This cause, however, does not explain how it is that *A. deflexus* is now more grown, for it seeds abundantly, and is also easily increased by division of its underground rhizome, which spreads at a great rate. It is a tall, vigorous plant, with wiry stems, and bright green leaves.

A. umbellatus, from Madeira, is also a beautiful climber worthy of more general cultivation.

The three species, however, which are by far the most frequently grown in our rooms and greenhouses are *A. Sprengeri*, *A. plumosus*, and *A. tenuissimus*. It was only ten years ago that Herr Sprenger, who collected for Messrs. Damman & Co.

of Naples, introduced the first-named of these species from Natal. It has become thoroughly popular—and deservedly so—as a room plant, as a plant for the cool greenhouse, and for the stove, for it possesses beauty of foliage, flower, and fruit, is easily multiplied by seed or division, and provided it has rich loamy soil, ample pot-room, plenty of water, it is a rapid and vigorous grower, making growths of 6 feet, or even longer. The flowers, which are borne in abundance under favourable conditions, are white, and possessed of a pleasant fragrance. The Royal Horticultural Society gave an Award of Merit to the variety compacta in 1898.

Asparagus plumosus and *A. tenuissimus* somewhat resemble one another in the light and fragile character of their stems and foliage, and also in the treatment suitable for their growth and health. Both may be readily multiplied either by seeds or by cuttings. To effect the latter, take off the young side-shoots close to the old stem to a length of about 4 inches, from April to June, and place in light soil in a close propagating case. Both *A. tenuissimus* and *A. plumosus* may be kept for some time as dwarf, compact pot plants by cramping their roots in a small space, but, given room, they both produce long shoots and develop individual character. In *A. plumosus cristatus*, each branchlet ends in a divided crest, after the style of the crested Ferns.

All the species of *Asparagus* like abundance of light; and although, like the garden *A. officinalis*, they are mostly long-suffering, they yet will repay generous and careful treatment. *Harry Roberts, Hayle.*

NEW OR NOTEWORTHY PLANTS.

WELFIA GEORGII (WENDLAND).

THERE are not many Palms in the tropics which can rival this species. He who reared this species told me that it is the most beautiful Palm which he knows. Some time ago I received a specimen of the fruit stalk with fresh seeds, so that it is to be hoped that this plant will come once more into cultivation. To-day there is hardly one living specimen of it in Europe. Some details about the fruit-stalk may be of interest. The main rachis is short, only 4 inches long, $1\frac{1}{2}$ inch thick, 2 inches broad. It divides into eight branches of 32 to 36 inches in length, and 1 inch thick; the cross section of each branch is octagonal; each face of the branch is loosely set with fruits, which are $1\frac{1}{2}$ inch long, $\frac{1}{2}$ inch broad, and $\frac{3}{4}$ inch thick. The whole fruit-stalk weighed 11 lbs.

MALORTIA KOSCHNYANA (WENDLAND ET
DAMMER, N. SPEC.).

This is a species nearly allied to *Malortia simplex*, Wendland, from which it differs in the simple, not branched spadix, and the somewhat larger leaves, which are paler below, and, what is the main characteristic, split down at the apex for about 2 inches. The plant grows together with *M. simplex*. My young seedlings are distinguishable from those of *M. simplex* by a more bluish-green under-surface, whilst the upper surface is dark green. I cannot agree with Prof. Drude, who unites the genus *Malortia* with *Reinhardtia*. The fruits are said to be very similar (I have not yet seen fruits of a true *Reinhardtia*), but there are so many important differences between these two genera, as has been already remarked by Sir Joseph Hooker in the *Genera Plantarum*, ii., 960, that they must be distinguished as two genera. One character of great generic importance in Palms is the formation of the margin and the apex of the pinnales. Between *Malortia* and *Reinhardtia* there are the same differences in regard to this as there are between *Licuala* and *Livistona*. I think no botanist would class a Palm with *Licuala* serrations with *Livistona*, even if the fruits were similar to those of a *Livistona*. *Dr. Dammer, Gross Lichterfelde, Berlin.*

A NEW FRUIT-TREE TORTRIX

(Penthina variegana, Hubner).

THIS common Tortrix Moth (fig. 126) appears to be widely distributed in the British Isles, and on the continent is one of the recognised pests infesting various kinds of fruit-trees. Hitherto, however, it has not been recorded as injurious to fruit-trees in this country.

Last year, a correspondent sent me specimens of the caterpillars from Oswestry, which he said had caused considerable injury to the Plum, Apricot, and Cherry, but it had not affected the Peach. Near Chester, it is very destructive to the Pear, but much less so to the Cherry. It is also common on other plants, and occasionally attacks the Rose, but prefers wall-trained fruit-trees. The caterpillars of this moth hatch from the eggs in the autumn, and after feeding a short while they make for themselves little galleries or cocoons on the bark of the tree (fig. 6 x x x). These cocoons are chiefly composed of finely-spun silk, covered externally with tiny pieces of foreign substances—portions of bud-scales, leaves, human hair, dirt, &c., and sometimes the grubs bite off the outer layer of the bark or a bud, and utilise it in the same way. So effectually are the galleries concealed on the rough bark, that it is almost impossible to find them, and they are in no way conspicuous even on the smooth bark of a young shoot. In these snug retreats the caterpillar passes the winter, finally abandoning them in the spring, so soon as the flowers and young leaves appear. Their habit, afterwards like that of many allied species, is to live concealed between the leaves of the food-plant, which they effectually fasten together by means of silken threads, and sometimes they will also turn down a portion of the leaf, as shown at fig. 5A. The caterpillars live in these retreats, and in them spin their cocoons, and towards the end of May change to the chrysalis stage.

Oddly enough, the caterpillar's retreat often consists of one living and one dead leaf, and sometimes two or more individuals tenant the same domicile. The young caterpillars feed chiefly upon the upper surface of the leaves, leaving a network of veins (fig. 5) in the same way as the Pear-tree "slug-worm." About the beginning of the second week in June the moths begin to appear, and a week later very few remain to hatch from the chrysalis. Immediately prior to the escape of the moth, the chrysalis bursts through the bonds of silk forming its frail cocoon, and works the anterior portion of its body to the outside of its retreat. The pupal skin then bursts and liberates the imprisoned moth, while the empty skin remains behind (fig. 2A), anchored to the silken cocoon by means of hooked bristles with which the tail is furnished.

The full-fed caterpillar (fig. 1) is about five-eighths of an inch long (16 to 19 mm.), and rather stout; the colour is leaf-green above, with a rather indistinct bluish dorsal line, with the head and first segment intense, shining black; underside paler, and there are numerous fine hairs scattered over the body.

The chrysalis (fig. 2, 2A) is at first of a pale greenish colour, but soon changes to a uniform dull black.

The moths (fig. 3, 3A), which were bred from the Pear and Cherry, are exceptionally fine specimens, and much larger than examples described by Stainton, the largest specimen measuring 10 lines (18 to 20 mm.). The basal portion of the forewings are of a dark leaden-grey colour, frequently with inconspicuous brownish markings. There is usually a conspicuous black spot in the centre of the wing, at the extreme edge of the dark portion of the wing, and another variously-shaped black mark beneath it; these, together with the dark outline, frequently bear a striking resemblance to the profile of a boar's head.

The apical half of the wings is white, or ochreous-white, with a row of black spots on the front edge (costa), a minute crescent-shaped mark at the tip,

and variously disposed, faint, leaden-grey cloudings. There is also, not infrequently, one or more small black dots opposite the large spot which forms the eye in the mask-like markings; the hind wings are leaden-grey, with the fringe paler. When at rest, this moth bears a striking resemblance to bird-droppings.

Treatment.—Make an application of Paris Green (POISON), at the rate of 3 oz. to 20 galls. of water, in March or April, just as the buds are opening, and a second application of the same material after the fruit has set. Thoroughly mix the Paris Green with a small quantity of the water, and afterwards add the remainder. Keep the mixture constantly agitated, and apply in a fine spray. Do not douse the tree with the mixture, but cover it with the finest possible spray. Towards the end of May, go carefully over the infested tree, and remove all the leaves which are spun together, and burn them.

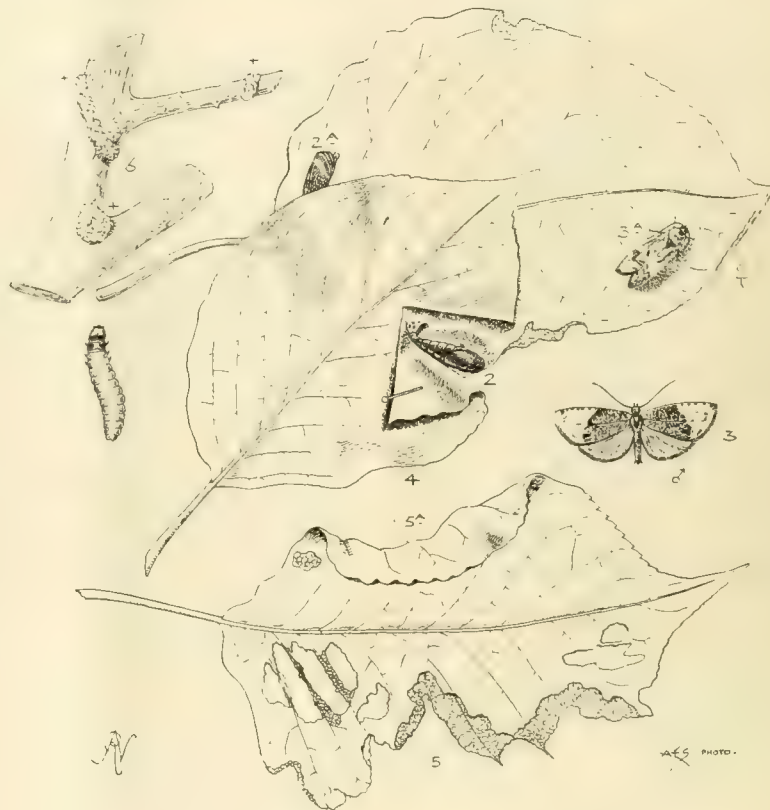


FIG. 126.—PENTHINA VARIEGANA.

A hot paraffin emulsion has no effect upon the caterpillars, but clean water applied with force from a hose-pipe, will drive numbers of the moths away, and thereby lessen the number of eggs. A winter dressing of fresh lime might also be tried, but spraying with Paris Green and hand-picking has given the best results. R. N.

TRELISSICK.

[SEE FIG. 127 AND SUPPLEMENTARY ILLUSTRATION.]

TRELISSICK, the property of C. D. Gilbert, Esq., lies on the western bank of the winding Fal, hard by the landing known as King Harry's Ferry, at which the river steamers call. The river banks are here steep and well-wooded, and the natural charm of the prospect leads one to recognise that the standpoint of those who claim for the Fal the distinction of being the most beautiful river of the west, a claim strenuously opposed by those who insist on the superior attractions of the Dart or the Tamar, has, at least, a claim to respect.

To the southward the view from the house extends over gently sloping grass-lands, studded with fine deciduous trees, to the river below, and

away to Falmouth and the far-off Manacles, where, two years ago, the hull of the ill-fated American liner *Paris* could be descried with a telescope lying close alongside the masts of the sunken *Mohegan*; while, from a spot in the garden a little to the eastward, an open vista framed by spreading trees discloses the curving reaches of the river, with the distant towers of Tregothnan topping the further hill. At all seasons of the year the gardens contain much to charm the eye. In the springtime the winding walks that lead through the spacious grounds present many a fair sight; grassy slopes lighted up with the soft yellow of countless Primroses; Wood Hyacinths, popularly termed "Bluebells," spreading an azure veil beneath the trees; hosts of Daffodils glittering in saffron and sulphur, with dainty heads bending gracefully to the soft spring breeze, and thrown into delicate relief by the green of the sward on which they

stand, by clustering evergreens in the foreground, and the wooded hill that, rising steeply across the valley, forms a background to the picture. Fine Conifers and deciduous trees of various species are plentiful on the estate. *Benthamia fragifera*, as elsewhere in Cornwall, is grown as an ordinary woodland subject, and proves of high decorative value. *Acacia affinis* forms thickets of closely-set stems, and other Acacias are also grown, *A. longifolia* being especially attractive when covered with its golden bloom. Close to the house stands an enormous Hawthorn, and near at hand a large specimen of *Pittosporum Mayi undulatum* raises its dense mass of small, shapely foliage.

Embothrium coccineum, the most brilliant of all flowering trees or shrubs, is also present. An opinion prevails somewhat widely that root disturbance and hard-pruning are alike injurious to the health of the *Embothrium*. It has, however, been proved at Trelissick that this tree will endure both these operations, not only with equanimity but with a resulting increase of vigour. In the disastrous blizzard of March 11, 1891, when so many thousands of noble trees were levelled to the ground in the West Country, a fine example of the

Embothrium was blown down at Trelissick, its roots being levered out of the ground. As soon as the snow was cleared away, a pit was dug, the tree pulled back into place, and about 10 feet of the top cut off. The specimen soon started into vigorous growth, and was not long in regaining symmetrical proportions. Specimens of the Embothrium that have attained a certain age sometimes show symptoms of a loss of vitality; such being apparent in the case of a tree at Trelissick. Mr. W. Sangwin, the head gardener, who for a long period of years has had charge of the estate, cut it hard back, with the result that it pushed out strong new growth, and was exhibiting every evidence of renewed vigour when I had an opportunity of inspecting it during the past year.

Garrya elliptica grows to a large size, one specimen in the open forming a shrub 15 feet in height, and as much in diameter, and bearing quantities of catkins, some of which are over 12 inches in length. *Fabiana imbricata* has developed into a bush 12 feet in height, and *Cytisus racemosus*

surroundings, and only such subjects are employed as will enhance the charm of natural effect. This is especially apparent at the lakeside, reached by a short walk from the house, passing through a little wood where *Cyclamen neapolitanum* and *C. Coum* cluster thickly by the narrow path. At the upper end of the lake, where it narrows to the width of a few yards, a fallen tree is converted into a rough bridge. Further down the lakeside another tree has fallen, its leafless branches rising high above the water; and along the level trunk *Clematis montana* and *Solanum jasminoides* have been trained, soon to drape the bare boughs with a mantle of flower.

In the opening days of summer the white Arums are at their best, hundreds of white spathes being reflected on the still surface. On the verge of the shore grow numerous flowering plants, *Iris Kämpferi*, *I. sibirica*, the variegated Water Flag, Day Lilies, *Libertia grandiflora*, *Calthas*, *Astilbe japonica*, Solomon's Seal, and *Primula japonica*, which throws up flower-scapes fully 4 feet in

this covered way is white with blossom, it presents an exceedingly attractive sight, being almost as ornamental in the autumnal days, when the ripe fruit hangs from the branches. A large assortment of Pears and Apples is grown, for which a neighbouring tower is used as a store-room. Mr. Sangwin thinks very highly of American Mother as a dessert Apple, considering it equal in flavour, and superior in keeping qualities to Cox's Orange Pippin, generally recognised as the king of dessert fruits. *S. W. F.*

ORCHID NOTES AND GLEANINGS.

SOUTHGATE HOUSE.

THE gardens of C. H. Feiling, Esq., at Southgate House, Middlesex, are justly famed for Orchids, of which the collection has been growing in numbers and interest. The remarkably healthy state of these plants reflects great credit upon the head gardener, Mr. C. Stocking. On the occasion of a recent visit, the *Cattleya*-house was gay with a number of well-flowered *C. Schroderæ*, among them being a very fine form of *C. Schroderæ alba*. *Lælia purpurata* was represented by finely flowered forms; and numerous fine forms of *Cattleya Mendeli* were observed, also flowering examples of *C. Mossiæ*, *C. intermedia*, *C. Lawrenceana*, and *C. citrina*. A fine plant of *Dendrobium D. lousieanum* was flowering freely in the *Cattleya*-house.

In the cool houses there were well flowered plants of *Oncidium sarcodes*, *O. concolor*, and *O. Marshallianum*; flowered *Cymbidiums* in variety, and various *Odontoglossums*, were making a fine display, one plant of *O. Halli* being particularly noticeable. In the *Cypripedium*-house I observed plants in flower of *C. exul*, *C. grande*, *C. Rothschildianum*, *C. Beechense*, *C. pulchellum*, *C. Haynaldianum*, *C. Lawrenceanum*, and *C. Chamberlainianum*. The plant-houses were gay with plants in bloom, and among them quantities of Carnations, most of which were continental varieties. In the fruit-houses, Vines, Peaches, and Nectarines, showed great promise.

The gardens, which are in capital order, displayed beds and borders of Tulips, Narcissus, and Polyanthuses, the last named consisting of an excellent strain. The Apple, Pear, and Plum-trees, in the kitchen garden, were full of bloom. Not much fruit is grown on the walls, and Mr. Stocking fears that the outdoor Peach crop will be light this year, owing to late frosts, but the weather being very dry, the outlook may not be so bad after all. *A. W.*

ORCHIDS AT ROSSLYN, STAMFORD HILL.

A very fine and interesting show of Orchids, being the continuation of an unbroken display since January, is now beautifying the Orchid-houses of H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr., Mr. Thurgood). *Odontoglossums* are the prime favourites, and among them are many handsome forms, notably *O. Pescatorei Pittianum*, with finely formed violet blotched flowers; *O. Halli* "Edward VII.," a most remarkable and beautiful flower, the largest and darkest in colour of any which has yet appeared; some grand *O. × Wilckeanum*; spotted forms of *O. crispum*; the fine rose-tinted *O. × Ruckerianum* Rosslyn variety; and a very remarkable form of *O. × Andersonianum*, with flowers as large as those of *O. crispum*. Good cultivation doubtless has much to do with developing the best characters of these subjects, but they must necessarily have remarkable natural features. Overhead in one of the houses, some good plants of *Odontoglossum citreum* are suspended, and below them are plants of *O. grande*, and other species. Plants difficult of cultivation are grown successfully here, and among them are the varieties of *Zygopetalum* known as *Bollea* and *Pescatorea*. One or two specimens of each species have been maintained in vigorous health for a number of years, and one or other are mostly to be found in bloom. *Miltonia Roezlii* is grown remarkably well, and the plants are making a good show; as also

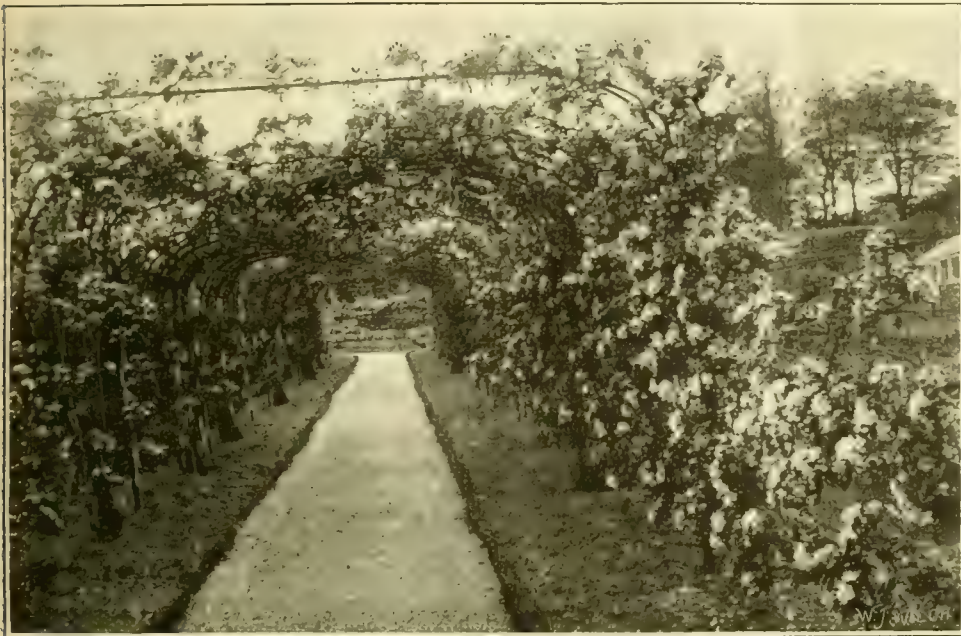


FIG. 127.—ROSE ARCADE, TRELISSICK, CORNWALL. (SEE P. 342.)

grows vigorously in the mild climate, often being in flower in mid-winter in open seasons. *Carpenteria californica* is about 8 feet in height; and two splendid plants of *Romneya Coulteri*, 5 feet high and 6 feet through, are objects of exquisite beauty when freely set with their great, white flowers, 5 inches and more in diameter, in the height of the summer, when the *Brugmansias* are in bloom in the open. The immense bushes of *Azalea indica* are smothered with blossom in the closing days of spring; and a little later *Raphiolepis ovata* is white with flower, while a spreading Venetian *Samach* (*Rhus Cotinus*) bears its feathery clouds of purple-red in the early autumn. Of the *Cordylines*, *C. australis* is common and flowers freely, and there is a large specimen of *C. Banksii erythroracis*, which bears drooping panicles of ivory-white bloom in the summer; while a very wide-leaved *Cordylina* is considered to be *C. indivisa vera*. *Ceanothus Veitchii*, one of the most ornamental of the family, has assumed large proportions; and the New Zealand Ribbon Tree (*Plagianthus betulinus*) and *Aucuba angustifolia* are also noteworthy.

Bedding plants are rigorously excluded from the Trelissick gardens; no touch of artificiality being permitted to mar the informal beauties of the

height. Spreading their giant foliage above the water grow colonies of the noble *Gunnera manicata*, many of their leaves being 9 feet in diameter; while the Water Dock (*Rumex*) displays its ornamental outlines, its foliage assuming a ruddy tint in the autumn. Around the lake at various distances are grouped *Spiræas*, *Kuiphofias*, clumps of *Moutbretias*, trees of the hardier *Fuchsias*, *Acanthus*, *Arundo conspicua*, and *A. donax*, *Pampas-grass*, *Miscanthus*, *Polygonum cuspidatum*, *Yuccas*, *Bamboos*, *Acacias*, and *Escallonia*s in variety; while on the shingly bar that divides the lake from the river Fal grows a screen of *Tamarisk*, enjoying the rudest of health, despite its roots being often covered with salt water. *O. munda regalis* flourishes by the waterside, *Lomaria magellanica* grows in profusion in close proximity, and the Tree-Fern, *Dicksonia antarctica*, as well as *Woodwardia radicans* succeeds in the shelter of the lakeside wood.

The Rose garden at Trelissick is well laid out in simple beds of dwarf bushes, while the path is spanned by Rose arches, and the high boundary-wall is covered with climbing varieties.

In the walled kitchen garden, a model of neatness, the central walk is covered for a great part of its length by a framework of iron arches, over which Pear trees are trained. In the spring, when

the *Phalenopsis*, which hang from the rafters of an old forcing-house or Pine-pit, the hot-bed of which is occupied by large specimens of *Eucharis grandiflora*. In an adjoining house the *Dendrobiums* of New Guinea are in a very satisfactory condition. Pretty botanical curiosities are in much favour at Rosslyn, and several interesting and rare species are in bloom, viz., the singular looking *Bulbophyllum Dayanum*, and *Oncidium Retemeyerianum*, with flowers somewhat resembling a tropical beetle, a rare plant.

In the *Cattleya* house a good show was presented of *Cattleya Schroderae*, C. S. Pittiana, a variety having a claret-crimson lip; and the delicately tinted C. S. Heatonense. There were also varieties of C. Mendeli, *Lælia purpurata*, &c.

In other houses were remarked a number of hybrid *Cypripediums*, and C. Lawrenceanum *Hye-anum* in bloom, among a number of scarlet-spathed *Anthuriums*; other plants were *Cattleya Schilleriana* Pitt's variety, a fine and richly coloured flower; *Cœlogyne Dayana*, with a profusion of flower racemes; *Epidendrum radicans*, and others; *Cattleya Skinneri alba*, *Eupiphrontis* × *Veitchi*, a good lot of *Miltonia vexillaria* varieties, *Lælia xanthina*, *Rodriguezia fragrans*, and a number of *Dendrobiums* and other things, both hybrids and species. J. O'B.

"LINDENIA."

The following are the plants figured in the May number of this periodical:—

CATTLEYA MOSSIE VAR. *MADAME LUCIEN LINDEN*, t. DCCXXXIII.—Perianth segments white, lip white, throat spotted with yellow, and with lilac stripes and blotches on the front lobe.

CŒLOGYNE BARBATA, Griffith, t. DCCXXXV.—Flowers racemose, $\frac{3}{4}$ inches across, white, stellate; segments lanceolate, lip projecting, lateral lobes white, erect; front lobe furry, smoky brown. Native of Bhotan.

CYPRIPEDIUM × *ALBERTIANUM* VAR. t. DCCXXXIV.—Standard erect, contracted and revolute at the base, white above, flushed with lilac at the base, where it is also marked with violet stripes and dots; petals rosy-lilac, yellow at the base with purplish spots, and bordered by a narrow, yellow edge; lip shining violet. This is a hybrid between C. *Spicerianum* and C. *insigne* var. *Wallacei*, raised by M. Jules Hye, Ghent.

CYPRIPEDIUM INSIGNE VAR. *CHANTINI*, SUB-VAR. *LINDENI*, t. DCCXXXVIII.—Standard white in the upper half, below, as also the other parts of the flower, greenish-yellow.

ERIOPSIS RUTIDOBULBON, t. DCCXXXIX.—Flowers racemose each 2 inches across, flat; segments lanceolate, reddish-brown; lip scoop-like, and yellow at the base; front lobe flattish, white, with purple spots. Native of Antioqu Columbia.

PHALENOPSIS AMABILIS VAR. *RIMESTADIANA*, t. DCCXXXVI.—Flowers racemose, each about 5 inches across, flat; outer segments ovate, lanceolate; inner larger, spreading, spatulate; lip shorter than the segments, deltoid-lanceolate lateral lobes convolute, yellow at the margins; front lobe prolonged at the apex into yellow threads. This fine variety was discovered by M. Rimestad. M. Lefebvre, formerly of the Buitenzorg Botanic Garden, says that P. *grandiflora*, which is very nearly allied to our present plant, grows on trees on the mountain side in open spaces, not in the shade of the forest, often on the Coffee bushes, in localities where the temperature never rises above 24° C., and where it falls as low as 13° at night in August. An *Odontoglossum*-house would suit the *Phalenopsis* better than the *Cattleya*-house.

SORRALIA × *VEITCHI*, t. DCCXL.—A hybrid between S. *macrantha* and S. *xantholeuca*. See *Gardeners' Chronicle*, 1894, ii., p. 103.

CABBAGES BOLTING, AND THE READING TRIALS.

ALTHOUGH complaints as to Cabbages prematurely bolting to flower are not so rife this season as they were a few years since, yet there are far too many such plants to be seen about, showing that the evil still prevails. Various reasons have been from time to time given as to why Cabbages should thus bolt off to flower just when they should, in the ordinary course of things, "heart in." Some have attributed the act to the season, although mild winters have seen the same results as hard ones. Others have laid the charge to bad stocks—such ones as have been grown from plants ill-selected. Some have philosophically regarded this premature tendency to flower as reversion to an original annual habit, such as might have existed in the primitive Cabbage ere it developed into a heart-producer, and

adopted biennial habits. That eminent authority Mr. A. W. Sutton, V.M.H., however, holds that the bolting is due to certain inherent qualities in diverse stocks, or strains, and that whilst some stocks, strains, or varieties, never do bolt when raised from an autumn sowing, others will do so; yet the latter are never otherwise than true to natural character when sown in the spring for autumn cutting. The remedy, therefore, in his estimation, is found in avoiding those stocks which are thus erratic and in sowing only in the autumn varieties that are reliable, and will invariably heart in. It was with a view to noting how far this theory was borne out by facts or result that I went to Reading the other day, for the purpose of seeing the very extensive trial of autumn-raised Cabbages Messrs. Sutton & Sons have on their seed farms.

The plot planted was 20 feet wide and some 300 feet long. In each row were fourteen plants, and of each packet or diverse stock two rows. There were in all fifty varieties under diverse names, and 157 diverse trial parcels—that is, stocks of the varieties from various growers. Seed was sown simultaneously on August 13 of last year, and the entire planting done on October 13. The seed-beds or drills were close by, and it was worthy of note, as showing that transplanting had nothing to do with the result, that in the seed-beds the bolting or otherwise corresponded exactly with the same features in the transplanted breadths. Beginning with a small hearting variety named Earliest, 60 per cent. had bolted; All Heart, a fine autumn Cabbage, 70 per cent. the same; Tender-and-True, dark-leaved, and conical in form, gave 40 per cent. bolted, although that is also a capital variety for spring sowing; Little Gem, small, compact, but now superseded by others, had 10 per cent. wrong ones; the better-known Little Pixie had every plant bolted. Next came a breadth of Suttons' Favourite, of which just 1 per cent. had bolted—an hardly noticeable quantity. This is a pretty, medium-sized Cabbage, and comes as an admirable succession to April, which is without doubt the best first early stock. Of some 200 plants, not one has run. Another stock is very even, there being in the breadth plenty of pretty hearts fit for cooking. Ellam's Early follows, and shows but three plants out of 100 that have run. This popular variety is here a little later than is April, and joins also to it a capital succession. Improved Nonpareil is somewhat later in hearting, and shows but 2 per cent. run to flower. Of what is known in commerce as the ordinary Nonpareil, some 50 per cent. have bolted. A very fine later variety is Sutton's Imperial, the hearts promising to be fairly large. Of this, also, but 2 per cent. had run. Really, in some of these stocks it would seem as if the bolters were rather intruders than actual representatives of the variety. Wheeler's Imperial, once so highly esteemed, is represented by a dark-leaved, but somewhat smaller-hearted stock, but has no bolters. A variety known as Johnson's Market Garden partakes of the character of Ellam's, a neat form, and none has bolted. Miniature Marrow and St. John's Day, the latter notably a first-class late autumn Cabbage, both show 70 per cent. of bolters. Summer Drumhead is a coarse-leaved form, not suitable for gardens; of that a few plants have run. Of Christmas Drumhead, all have run. Fulham is here also very coarse, and unfit for garden work. Offenham is a good, though rather large Cabbage, but not a few plants are uneven. East Ham bears to it close resemblance, compact-headed and green, but quite late. Heartwell Marrow has 25 per cent. of bolters; this is less meritorious than are some others. London Market has a few run plants, but it is not a well selected stock. Mein's No. 1 stands well, but is too large and loose-leaved here, and needs ample room. Sutton's Flower of Spring is now well known, and is also a first-rate early variety. It is very true to character, and not one has bolted to flower. Drummond's First-of-All closely resembles the preceding, but there is fewer ready for cutting. Early Market is a dwarf,

medium-sized, early Cabbage, of very useful character, all hearting in. Main Crop, otherwise a handsome Cabbage, has 10 per cent. of bolters. Enfield Market is large, loose leaved, and late, certainly not now a garden Cabbage. As showing how the time of year affects the popular Coleworts, every plant in the Hardy Green and Rosette, both so valuable in the autumn, have gone to flower. Even the "picklers" seem to resent being sown out of season, as both the large Red and the Blood Red have some 6 per cent. of run plants.

Throughout there is the fullest evidence furnished that Mr. Sutton's observations as to the erratic tendency of certain varieties is fully justified. It does not follow that this bolting characteristic occurs every year, but it is so common a feature that it justifies the advice to Cabbage growers to avoid sowing in the autumn those stocks which show this bolting tendency although so safe to rely upon if sown in the spring, and to trust only to those which have long proved to have reliable and assured hearting properties. A. D.

FORESTRY.

FANCIES AND FACTS IN ENGLISH FORESTRY.

It is very probable that Solomon was led to make the assertion that there was nothing new under the sun by hearing of some of those discoveries which are made every now and again in connection with our oldest industries and institutions. Agriculture, horticulture, and forestry, are all familiar with the man who wakes up one morning with the idea that he has made a discovery, and who hastens to announce it to the world before he has time to forget it. Whether this discovery be the result of sudden inspiration or a remark let fall in a casual conversation, the general purport of it is much about the same. This is invariably to the effect that the whole theory and practice applying to some particular branch has hitherto been erroneous; and that preceding generations who have accepted that theory and adopted that practice have been guilty of gross superstition. Such announcements are usually received with respectful admiration by a small circle of friends who may have a considerable experience of the discoverer, but a limited one of the subject to which he refers. By the practical man they are usually looked upon as "fads," and as such invariably die an early but quiet death.

For instance, a few years ago some one discovered that British forestry was in a bad way. As no one took the trouble to deny it, it was accepted as a fact by a few enthusiasts, who saw an opening for philanthropic work. They brought it to the notice of the Government, and the latter, not wishing to discourage them, appointed a Select Committee to take up their attention for a time. The Committee sat, called and heard witnesses, and professed to be duly impressed with their evidence. The evidence of the Scottish foresters was chiefly to the effect that they were a very good kind of forester indeed, and that Scottish forestry could not very well be done any better than it was. The evidence of the foreign experts, on the other hand, was chiefly to the effect that British forestry could not very well be any worse if it tried. The Committee issued a report, and did its best to hurt the feelings of no one; while the British landowner, who had quietly smiled at the whole thing, went on managing his woods in his own way as before.

But the experts had been heard in the land, and, like the importunate widow, refused to be silenced. The Select Committee had shelved the question of a British School of Forestry by ingenuously asserting that they saw no place where they could put one. The experts said: "You must have a School of Forestry. How can your woods be improved until you get a more scientific kind of man to manage them? Give us £10,000, and we will found a school, and ourselves be professors therein."

The landowner still hesitated, and in the mean-

time kept his money in his pocket. The experts then said "Well, if you don't give us means to educate your foresters, we must educate you up to the required standard." They lectured, wrote, and published, and gave graphic descriptions of how well things were done in Germany, and how badly they were done here. They reminded the landowner how great a loss he was incurring by persisting in his present ways, pointed out the millions of pounds sterling that went out of the country for timber imports, and used every argument in their power to convince him of the error of his ways in wood-management. Still he gave no sign of repentance. They then said amongst themselves "We must give up generalisation and go more into detail. We must adapt ourselves to his limited intelligence." This was the signal for a whole host of remedies for improving British forestry, the chief of which may briefly be noticed:—

One said game was the reason British woods were so badly managed—a fact with which everyone

necessary number of birds, allow for the usual percentage of misses, and the requirements of the next breeding season, and there you were. No nonsense about game-cover, game disturbance, or any of the usual whims of which the gamekeeper makes so much. Once give the birds to understand that they must live under the new conditions, and if they did not choose to do it, let them take the consequences. As for the forester, timber-growing was his proper vocation, and game-rearing a detail upon which he would bring his superior intelligence to bear. Thus spoke the forester-gamekeeper man. *A. C. Forbes.*

(To be continued.)

CULTURAL MEMORANDA.

DAPHNE INDICA.

THE red and white-flowered varieties of *Daphne indica* are invaluable for house decoration, and the flowers being very sweet-scented, are favourites

should be planted in a well-drained border, and trained on arches, over doorways, or in some light position. After flowering, the previous year's growth should be pruned, and the weaker shoots thinned. Beyond placing the main branches in position, very little tying is desirable, as the flowers, of a lovely full rose colour, borne in corymbs on the ends of the branches, are most effective when allowed to display themselves in a natural manner. The plant blooms during the months of April and May. *James Baxter, Boldre Grange Gardens, Lymington.*

Calceolaria amplexicaulis.

I was pleased to read H. T. Martin's note concerning this good old variety. We employ only this one at Bicton, and this rather largely. The cuttings are inserted in sandy loam in cold pits, about the end of the month of September, or early in October, at a distance apart of 3 inches, and there they remain till March, when they are replanted into other pits at 6 inches apart, and protected



FIG. 128.—GROUP OF DWARFED PLANTS EXHIBITED AT THE TEMPLE SHOW BY MR. J. RUSSELL, RICHMOND NURSERIES, SURREY. (SEE P. 351.)

agreed. He contended that the proper remedy was the extermination of the gamekeeper, and the relegation of the functions hitherto carried on by that official to the forester. The question as to when and where the proprietor should be allowed to shoot must be decided in the interests of timber-growing, and not, as hitherto, by the inclinations of the estate-owner himself. The rabbit was to be excluded from the woods altogether, and kept in special penitentiaries provided for him; and the pheasant reared on more scientific and economic lines. The special feature of the new game cover was to be its ability to meet the law of supply and demand. If the proprietor wanted to kill a certain number of rabbits, or as many pheasants, on a certain day, he had only to intimate the same to his forester, and the latter (if properly versed in the new system) would tell him where to go for his rabbits, and where for his pheasants, and (we presume) make up the deficiency at the end of the day, if required. The whole thing was to be worked on a kind of glass-ball principle. If so many shots were necessary in the course of the season, all the forester had to do was to breed the

with almost everyone. A few years since, I struck cuttings of the young wood when sufficiently hard, and some shoots were grafted on the roots of *D. Mezereum* and *D. laureola*. Those which were grafted on *D. Mezereum* did best, and grew more robustly and quickly than cuttings; whilst those put on to stocks of *D. laureola* roots were a long time in uniting, and grew very slowly afterwards. *D. indica*, being an evergreen, led me to expect that I should be successful by grafting it on the roots of the evergreen *D. laureola*. I have not tried them on *D. pontica*, as I could not persuade myself to rob this beautiful shrub of its roots, and even if I did so, the roots would probably have turned out to be one of the varieties I have mentioned. *W. W., Doddington, Nantwich.*

CANTUA BUXIFOLIA [DEPENDENS].

This fine and effective spring-blooming plant is apparently almost forgotten by present-day gardeners. It may be described as a climbing plant, of moderate height, suitable for the conservatory or cool greenhouse (figured in *Gardeners' Chronicle*, June 19, 1880, fig. 136). To obtain good results it

from frost at night till early in the following month. In the meantime the points of the shoots are nipped out once or twice to give bushiness. The plants are the better for being planted where they are to flower towards the end of the month; but as the flower-beds are always filled with spring bedding-plants, it is often the first week in June before I can get them planted, and notwithstanding this late date, it is seldom that a plant is lost. This is more than can be said of *Golden Gem* and one or two others, which die off in a wholesale manner in most years. *C. amplexicaulis* reaches nearly 4 feet in height in this part of the country, and twiggy boughs have to be put to each as a support, and it does far better under this sort of treatment than when pegged down to the soil. The best beds for the past few years have been those that were planted with specimen plants of *Plumbago capensis* 5 feet in height, and nearly as much through, dotted among the *Calceolarias*, the two colours going well together. They are also grown in 6-inch pots, and have then very good effects, and they also go well together with a groundwork of *President Garfield Heliotrope*, or *Pelargonium Manglesii*. *J. Mayne, Bicton, Devon.*

THE RASPBERRY.

At this season the suckers should be removed as soon as observed, a few only of the best placed and strongest being left for fruiting this season. When an increase of the stock of plants is desired, more suckers may be left standing. This reduction of the number of canes will strengthen those that remain. Raspberries being gross feeders, and the roots found chiefly at the surface should not be left to contend with weeds, and the land should be hoed occasionally with the object of destroying these. The variety Superlative, a valuable variety, raised by Mr. Merryfield, gardener at Waldershare Park, Kent, should find a place in every garden. I have observed this variety fruiting so heavily that unless afforded plenty of manure-water and rich mulches the canes have become so weak as to produce a poor crop. It is always advisable to make a fresh bed before the old stools get too much exhausted. I have this season planted several rows of Superlative at 6 feet apart, the canes being fastened to wire stretched from posts put in at 6 feet apart. The plants were put in the rows at 6 inches apart, and were cut down almost to the ground level after they had pushed into growth. Between the rows Lettuce, Cauliflowers, and French Beans will be grown for the space of one year. The land on which these were planted was trenched after being heavily manured. After the crop of fruit is gathered, the canes which have fruited should be removed early. Baumforth's Seedling, Carter's Prolific, and Norwich Wonder, may all be classed as first-rate red-fruited varieties. Belle de Fontenay is a good double-fruited kind, and in some seasons ripens very good crops of large fruit, very late sometimes, till checked by frost. *H. Markham, Wrotham Park, Barnet.*

NITRATE OF SODA AND BEETROOT.

We note in *American Gardening* for May 11 last, a recommendation to use nitrate of soda as a manure for Beetroot, the writer alleging that this substance induces early development of the root, besides affording superiority of quality, due probably to the rapidity of growth. This is not new. The experiments of Märcker proved that nitrate of soda increased the weight of a crop of Sugar Beets, the nitrate being used before sowing the seed, and not as a top-dressing. Our cultivators believe that nitrate of soda exhausts the soil, that is, it leaves it in a poor state for the succeeding crop. That is true, as by increase of growth in the plants manured with it, other substances are taken out of the soil, namely, potash and phosphoric acid; and in order to maintain fertility, these must be restored to the soil. The best manner of doing this is to employ superphosphate of lime and potash, as fractional top-dressings for the land the next season.

THE BULB GARDEN.

IRIS STYLOSA (I. UNGUICULARIS, POIRET), AND ITS VARIETIES.

THERE is a good deal of difficulty experienced by gardeners in some parts of the country in flowering this Algerian Iris, the plants making grosser growth than is usual, and forming great thickets of leaves and no flowers. Offsets from floriferous parent tufts when removed to other gardens also refuse to flower. The probable reason for this is, doubtless, over-luxuriance produced by a soil that is too rich for the requirements of the plants; for in cases that have come under my notice during the last few years, this has been very evident. Once these plants grow out of a flowering state, they are not easy to reclaim; nothing short of lifting them and exposing their roots for a time to the air—half killing them, in fact—will throw them into a flowering state again. They succeed in a poor soil of fair depth, and in a warm position, but not necessarily under a wall, though the wall would protect the flowers from frost and rain. The root-stocks should not be buried deeper than is

necessary to give the plants fair hold of the ground, for these and most other grassy and rhizomatous Irises grow better and flower much more freely when the root-stock is half exposed. *Iris stylosa* can endure almost any amount of drought, and requires no more water other than the natural rainfall, save in the driest of positions, a little ripening from July onward being distinctly beneficial to the plants. These Irises may be grown in a variety of ways during the winter: well ripened pieces lifted, potted, and housed, or planted out in a deep, cold frame in autumn, will afford plenty of flowers in the winter. Stout pieces potted up in April to root and grow, plunged in the open, will form nice established plants for house decoration, or for their yield of beautiful, mauve-tinted, sweetly-scented flowers in a cut state.

Several varieties of the plant are in cultivation; the best one being *speciosa*, a dwarfier-growing plant with short, stout tufts of grass-like foliage, and rich violet-tinted flowers of larger size, coloured royal purple on the blades of the falls. The flowers of this variety are borne high above the foliage, and it is on this account the best of all for general planting and for forcing. A sport of this plant having massive flowers with crimped margins throughout, edged royal purple, and of a richer, almost purple-violet ground colour, has originated in Messrs. Wallace & Co.'s nurseries at Colchester. It is an advance on *I. speciosa* in point of colour and size, but it flowers a week or two later.

The variety *marginata* is of much stronger growth than the type plant, having leaves 2 to 3 ft. long; the further distinction being a feathering of white on the margins of the falls, and to a less extent on the margins of the standards. *Alba* has lovely white flowers, rather thinner than those of typical *stylosa*. It is the rarest plant of the lot, and it requires much more genial treatment than is good for the others. A thin-flowered form of *stylosa* with pale mauve flowers of delicate tint, texture, and fragrance, has been called *lilacea*; it flowers later than the type, and is found at its best in the beginning of April. It is probably identical with *Iris stylosa angustifolia* (Hort.), a plant of which has been growing in the alpine garden at Kew for some years. Two other varieties have been recorded—*purpurea* and *Elizabethæ*, but I have never met with them. *Geo. B. Mallett.*

TULIPA GESNERIANA.

It is not perhaps generally known that this splendid late-flowering Tulip has a capacity very uncommon amongst the family of throwing out on long roots or semi-stolons small bulbs, which, when planted, produce small flowers that have no resemblance to the type, as they are of a rosy-pink colour, and have sharply pointed petals, also on much shorter stems. These Mr. W. Barr, who finds them to occasionally crop up in the Long Ditton Nursery, calls thieves. They seem, never under the most favourable conditions of culture, to revert; and are now in commerce as a distinct, and certainly pretty variety, under the name of Hatfield Pink. The generation of these rogues is not found, as a rule, on deep, retentive soils. Parrot Tulips have occasionally thrown off similar false bulbs, and the variety has been designated *platystigma*; that is also a pretty form. *D.*

PLANT NOTES.

IRIS RETICULATA MAJOR.

THE raiser of this good variety was the Rev. Mr. T. G. Nelson, of Aldborough Lodge, Norwich, from whom I received a few bulbs some twenty-five years ago, through the kindness of his brother, Mr. C. G. Nelson, Holme Lodge, Godalming, and a few years thereafter I handed it over to the trade. *Max Leichtlin, Baden-Baden.*

ROYAL BOTANICAL GARDENS, EDINBURGH.

A recent visit to Edinburgh enabled me to make a short inspection of the Botanic Gardens, which

grow yearly more interesting to the cultivator of hardy and other plants. Among the many plants now largely represented there are the Saxifrages, flowers which have for a long time been cultivated in these gardens, but are now made the subject of special study by Professor Bayley Balfour, the Regius-keeper. One especially appreciates the way in which they are grown in the rock-garden, in sufficient numbers to give one a good idea of their effect, and so as to show much better than is usually the case the true characters of the plants—the large masses of the commoner forms, and of such as *Salomoni*, *S. pseudo-sancta*, *S. Barseriana*, *S. apiculata*, &c. My visit, towards the end of last month, was late for observing these plants in bloom, there being at that date an interval between the earliest to flower and those which succeed them. On the rockeries the mossy Saxifrages were barely open, the most advanced being that frequent bloomer named *S. Lindsayana*, which was, I believe, raised by Mr. Potts at Lasswade, N.E., and which blooms some three times a year in Edinburgh. In the frames there were many of the smaller species, but as these are not seen by visitors in general one need say little about them. Those of the *Megasea* section are, however, well represented, and have been carefully studied by Professor Bayley Balfour, who has reduced them to a few species, and cleared up several errors current in gardens. I was glad to learn from Professor Balfour that he has in contemplation the printing of a guide to the Saxifrages in the garden, which will be illustrated, and, although not a monograph of the genus, will doubtless be of considerable service to those who are interested in the genus, even if they are unable to visit the gardens at Edinburgh. I hope, ere long, to be back again; and would urge upon those within a reasonable distance the desirability of seeing the Saxifrages there. *S. Arnott.*

MERTENSIA PRIMULOIDES.

This plant is rather an interesting addition to the hardy alpine. Seed was collected for Mr. Duthie three years ago in the Himalayas of Hazara. Hazara is a district in the extreme north-west of British India, separating Kashmir from Afghanistan. The plants, so far, are very dwarf. With the flower-spikes included, they do not exceed 6 inches. The flowers have what are often called rainbow colours, probably because they are so difficult to find in a rainbow! The opening colour is a rich velvety magenta-purple, which passes as the flower ages through various shades, and finishes a pale lilac blue. The effect of a little colony of the plants is rather unusual and striking. *A. K. Bulley, Neston, Cheshire.*

SPIRÆA ARGUTA ×.

Since the illustration of this hybrid *Spiræa* appeared in the *Gardeners' Chronicle* (July 3, 1897), it has become much better known and more generally cultivated in gardens. This it well deserves, for of the early-flowering group of *Spiræas* it is, in my opinion, the best—superior even to *S. Thunbergi*, which is one of its parents. It is a shrub which will probably not get to be more than 6 feet in height, and is distinguished by its pleasing habit, and by its thin graceful branches, which have a rather arching mode of growth. It bears its flowers on the upper side of the branches, so that each twig forms a crowded, one-sided raceme of flowers. As in all the *Spiræas*, its flowers are small, but in this case they are of an exquisitely pure white—purer than in almost any other *Spiræa*. Its leaves are 1 inch to 1½ inch long, obovate, with a few teeth towards the apex, and of a bright, even vivid green. This *Spiræa* is now in flower, being about a fortnight later than is usual. In recent years it has generally been fully out by the third or fourth week in April. It was raised by Herr Zibel at Münden, Hanover, and is supposed to be a cross between *S. multiflora* and *S. Thunbergi*. It can be increased by layers and cuttings, the former method being preferable when plants of serviceable size are needed quickly. Several large groups form conspicuous and beautiful features in the grounds at Kew at the present time. [The publication of this note has been delayed. *Ed.*]

ÆNOTHERAS.

THE MOST ATTRACTIVE SPECIES—HOW TO GROW THEM.

AMONG flowers standing deservedly high in the estimation of gardeners are the *Ænotheras*, or Evening Primroses. They present much diversity of appearance, and adapt themselves to many purposes in the garden. The night-blooming species always attract, and form a pleasing class as a whole. On a summer evening it is pleasant to walk among the flowers and observe the great and charming blooms of the glorious *Æ. cæpitosa* fully open, and to compare them with the flowers of others of the true "Evening Primroses," such as *acaulis* (syn. *taraxacifolia*) or *missouriensis*. The use of the popular name of "Evening Primroses" makes one remark that it seems unfortunate that we do not follow the example of the Americans, who apply to the day-blooming *Ænotheras* the expressive name of "Sun-

leading, as it is not the only one of the species which is biennial. The plant sows itself so freely that no trouble is experienced in keeping a stock of the plants. The plant grows in some places to a height of 4 feet, which height is exceeded by *Æ. Lamarckiana* or *grandiflora*, which possesses handsome yellow-coloured flowers, which open in late afternoon, and last until the next day.

Perhaps the most beautiful species is *Æ. cæpitosa*, which is considered to be identical with *Æ. eximia* and *Æ. marginata*. I think, however, that there are really two plants passing under the same names, the one rather dwarfer than the other, and with equally fine flowers. Under one or other of its names it is a general favourite in those gardens where it can be induced to grow. Its large white flowers, opening late in the afternoon, are handsome, the foliage is attractive, and the habit neat. It is a plant difficult to establish in some

places is not of such an erect habit of growth as *Æ. Fraseri*, and is weaker in the stems, but it makes a brilliant display in the sun of summer.

A very ornamental evening-flowering species of decumbent habit is *Æ. missouriensis*; its variety, *macrocarpa*, being distinguished by its broader leaves. It is a capital plant for the rockery or for the front row of a border of light soil. The colour of the flower is soft yellow.

The small-growing Californian species, *Æ. ovata*, is an exquisite plant for the alpine garden, with its small, ovate leaves and its almost stemless yellow-coloured flowers, which are not unlike those of a Primrose. This species is injured by wet in the winter months, and should be afforded shelter from it. The little *Æ. pumila* is another *Ænothera* suitable for planting in the rock-garden. It grows about 6 inches in height, and its flowers are yellow produced in the month of July.



FIG. 129.—GROUP OF MOSS ROSES EXHIBITED AT THE TEMPLE SHOW BY LORD ROTHSCHILD, TRING. (SEE P. 351.)

drops," a term which well conveys the appearance of some of these lovers of the sun, which seem to have almost borrowed its radiance, so glowing are they as we look upon them on a bright day in July. The *Index Kewensis* names upwards of 160 species, with a bewildering array of synonyms in addition; but only a few of these are in cultivation.

A remarkably pretty plant is *Æ. acaulis*, but, unfortunately, it is not hardy, and requires to be treated as a half-hardy perennial. It is a native of Chili, and has pinnatifid leaves and large, almost stemless, white flowers, which fade off to a reddish hue. It is a good rock plant on a level terrace. It appears in the *Kew Hand List* as *taraxacifolia*, the name by which it is generally known in gardens. *Æ. albicaulis*, a species flowering in the month of June, has white flowers, which, like many others, acquires a pink tint when fading; it grows about 1 foot in height. It is a biennial.

One of the most accommodating of the biennial *Ænotheras* is *Æ. biennis*, which is rather mis-

leading, as it is not the only one of the species which is biennial. The plant sows itself so freely that no trouble is experienced in keeping a stock of the plants. The plant grows in some places to a height of 4 feet, which height is exceeded by *Æ. Lamarckiana* or *grandiflora*, which possesses handsome yellow-coloured flowers, which open in late afternoon, and last until the next day.

Perhaps the best of the day-blooming and erect-growing species is *Æ. Fraseri*. The *Index Kewensis* refers this to *Æ. glauca*, but the *Handlist* appears to recognise *Fraseri* as a species. I think there is little difference between it and the ordinary *Æ. glauca*; but whether it is treated as a species or as a variety, there can be no question as to the beauty of the plant. It grows on sandy soils to a height of about 3 feet, and blooms profusely in the summer months. Apparently it is from this species that the double-flowered form *Wm. Cuthbertson* was raised—a handsome variety, with crimson-brown stems.

Another *Ænothera* of somewhat similar appearance to the last-named is *Æ. fruticosa*. Its variety, *Youngii*, is superior, and it, like *Fraseri*, has yielded a semi-double flowered variety. *Æ. fruti-*

Ænothera speciosa, a white-flowered species, forms a neat bush from 2 to 3 feet in height, and flowers profusely. The variety *Æ. s. rosea* was shown in London last year, and attracted much attention.

There are many other perennial or biennial *Ænotheras*, but those named are the best that I know of which are in cultivation in British gardens. The plants do not require much attention as a rule, but of the day-bloomers, *Æ. Fraseri* and *Æ. fruticosa Youngii* are the least troublesome to grow; of the others, one may name *Æ. missouriensis* as being generally satisfactory. The greater number can be easily raised from seeds, though these are seldom available in the case of *Æ. cæpitosa*.

Ænotheras thrive well in dry soil, but they should not lack root moisture when in bloom. We are told that they grow naturally in a dry soil yet *Æ. f. Youngii* flag, and soon go out of bloom if the soil becomes very dry. *S. Arnott*, *Carsethorn-by-Dumfries*, N.B.

FLORISTS' FLOWERS.

CARNATION SIR CHARLES FREEMANTLE.

THIS is what may be termed a perpetual-flowering Carnation, of the *Souvenir de la Malmaison* type, for it may be had in flower nearly the whole year round with judicious management. I know of no other Carnation, unless it be one of the tree varieties, that will produce such a long succession of bloom throughout the winter months as the one under notice, and the individual blooms being large in size, and rich rose-pink in colour, prove invaluable where button-hole flowers of first-rate quality are in daily demand. As a spring and summer bloomer it is first rate, and ranks on equal terms with *Princess of Wales* for size and quality of bloom. Two-year-old plants are, I find, the most free-flowering for winter work, and they succeed best in a temperature ranging between 55° and 60°, according to outer climatic conditions. For spring and summer flowering the greatest quantity of flowers are produced by plants eighteen months old, but those of superb quality by those obtained from layers the previous autumn. As with other varieties of the *Malmaison* section, layering should be done as early as possible in this case, so that the plants get nicely established before winter sets in. *A. W.*

DOUBLE CINERARIAS.

Though these are little grown, I consider them more useful than the single forms. The flowers have greater substance, will travel better, and last longer when cut, and the plants may be as easily cultivated as the single ones. The seeds should be sown in June, in pans of light, rich soil. Place them in a cold frame having a north aspect. The seedlings grow much stronger when grown in a cool position, and are better in every respect if no shading is used. Never permit the plants to become dry at the roots, and do not neglect to feed them. Cinerarias are very fond of soot and cow-manure, and about two top-dressings of Standen's manure may be given them during the season. Treated in this manner, plants can be grown in 6 or 7-inch pots that cannot fail to be of use.

The double varieties may also be propagated from offsets or cuttings, and they may be taken when the plant is flowering; the cuttings generally begin to appear when the flowers are passing. These young growths should be taken with a heel if possible, and placed into thumb-pots containing sandy soil, and if they be kept in a moderately close atmosphere for a few weeks, they will soon emit roots, after which the plants should be allowed plenty of air on all occasions. *W. A. Cook.*

THE WEEK'S WORK.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bicton, East Budleigh, Devonshire.

Cardoons.—After being well hardened, those sown under glass should be planted out 15 inches apart in trenches prepared as for Celery, and thin to the same distance those sown in permanent quarters a month since. Shade the newly-planted Cardoons for a few days with light branches. Saturate with water the roots of the plants before removing them, and treat similarly the trenches before putting in the plants.

Coleworts.—If seeds of this very useful little Cabbage be sown, the plants will be of service towards the autumn. Sow again in a fortnight. If the soil be very dry, the drills should be watered before these or any other seeds are sown.

Endive.—Make a moderate sowing now, and repeat every two weeks until the middle of August. Transplant the seedlings in rows 12 to 15 inches apart; Moss and White Curled are suitable varieties for early sowings.

Turnips.—A good breadth should now be sown for early autumn use, selecting such varieties as Veitch's Red Globe and Orange Jelly. A north aspect will be best, and the drills may be 15 inches apart. Afford forward crops copious supplies of

water, and dust them frequently with fresh soot and quicklime.

The Earliest Cauliflowers have probably established themselves, and may be afforded diluted liquid manure from the farmyard once or twice a week. A good soaking of clear water had better be applied first.

Watering and Mulching.—Owing to the continued drought (we have had no rain here since May 8) the surface of the ground has become very dry, and on light, sandy soils watering entails a deal of labour just now. Small seeds such as Lettuce, Parsley, Turnips, Leeks, Broccoli, &c., have made little or no progress for some time. Growth may be encouraged by affording the plants a thorough watering twice a week after 3.30 p.m. in the day, dusting the following morning with wood-ashes and quicklime alternately. If a good mulch of partly-decayed leaf-soil, fibre refuse, or even mowings from the lawns can be afforded, it will not only benefit the crop, but save the water.

Tripoli Onions.—Remove any flower-spikes that appear, and treat them similarly to Cauliflowers in the matter of feeding and watering, that is, liberally.

Hoeing.—The surface of the soil quickly cakes after watering, and the hoe should be kept constantly at work between the plants. This operation is very necessary.

The Mushroom-House.—Beds that were spawned some four or five weeks ago and are now yielding good crops, should be afforded an abundance of tepid water through a "rose" can. If any of the beds are covered with hay, straw, or mats, these should be frequently turned to prevent mouldiness. The house cannot easily be kept too cool from now onwards, if the beds are now yielding, but the necessary ventilation must be afforded without admitting too much light. The windows and doors might be left open a little about 9 p.m. and the amount reduced next morning between 5 and 6 o'clock. Keep the beds out-of-doors well covered to retain the heat and prevent excessive evaporation. Sprinkle them overhead occasionally with water, and keep a sharp look-out for slugs. When gathering the crop, twist out the Mushrooms in preference to cutting them with a knife, and remove the exhausted spawn.

Routine Work.—Lose no opportunity of plying the hoe among all sorts of crops, the more so if water has to be applied. Water should be applied soon after midday, the nights being still cold, although the temperature has not fallen below 35° in this part for the last three weeks.

FRUITS UNDER GLASS.

By MAICOLM MCINTYRE, Gardener to Sir CHAS. TENNANT, The Glen, Innerleithen, Peeblesshire.

Applying Water.—It is usual to apply water to Vines at stated intervals, viz., to render the border thoroughly moist when starting the Vines; again later, when the Grapes have attained to the thinning size; and when they are commencing to colour. These are very good rules as regards watering with a view to feeding the Vines, but inside borders often require to be afforded water more frequently than this, for if a border is properly made the drainage will be efficient, and there will not be much danger of affording too much water. There are more failures from insufficiency of water than from the reverse. The times when water may be applied will depend on the state of the Vines, and the size of the border. Vines growing in narrow borders when in full growth require water twice a week, whereas it would do harm to those growing in wide ones. It may be safely asserted that Vines growing in a fair-sized border, which they have fully occupied, will require a weekly application of water. The gardener must, however, be guided by circumstances, and it should be remembered that borders made of heavy loam do not require the same quantity of water as those that consist of sandy loam.

Figs.—When all the fruit has been gathered from the small early varieties grown in pots, or from other Fig-trees, remove the loose portion of previous mulchings, and replace it with well decomposed manure. This will encourage root action and assist the trees to perfect the second crop of fruit. If the trees have become infested with red spider or scale, syringe them with Bentley's or any other reliable insecticide; or if time can be afforded sponge them with some soapy water, and syringe with pure water twice a day. Although a second crop is valuable, we should be content with a very moderate one, as the trees require vigour to enable them to yield a full crop when forced early year after year.

Peaches and Nectarines.—Early forced trees will soon have yielded their fruits, and any of the shoots on which they have been borne that are not required to extend the trees, should be cut away to admit of the full exposure of the foliage to light and air. Syringe the trees copiously at least twice a day, and if red spider or scale prove troublesome use insecticide at once. Keep the house as cool as possible to prevent premature ripening of the wood. The borders and floor should be moist, and in showery weather remove the roof-lights if this be possible. Pinch gross-growing laterals, but avoid giving a check by a great reduction of foliage at one time. Before the fruits upon succession trees begin to ripen, turn aside the leaves, and raise the fruits to fuller exposure by placing laths under them, the laths resting across the trellis. If the weather prove dull and wet, a little fire-heat will be necessary. The temperature should be not lower than 60° to 65° at night, and 5° to 10° more by day. Cease syringing as soon as the fruit shows signs of ripening, but take care to have the foliage free from red spider before the syringing ceases, as the pest will increase so rapidly whilst the fruit is ripening as to seriously injure the trees. See that there is no deficiency of moisture in the border, and if necessary give a thorough supply of water.

Late Houses.—Train and tie-in the young shoots that are to carry next year's crop, and allow them to extend as far as space permits, being careful to avoid overcrowding. Side shoots not wanted for next year's fruiting or for furnishing the trees should be pinched, and also any gross shoots. In thinning leave a few more fruits than will be required for the crop. A Peach to every square foot of trellis is ample; while Nectarines may be left a little closer. Syringe twice a day in fine weather, and always early enough to allow the leaves to become dry before night. When the trees are in heavy fruiting and carrying good crops, mulch the borders lightly with manure. If they are young and vigorous, lighter and less rich material will be better. Water thoroughly, always affording sufficient at a time to reach the drainage. Ventilate early, and increase the ventilation as the sun becomes stronger. Close early if ripening needs to be accelerated. I can obtain good flavoured Peaches at the end of October and beginning of November, and this is quite late enough.

THE FLOWER GARDEN.

By T. H. SLADE, Gardener to Lord POLTIMORE, Poltimore Park, Exeter.

Border Carnations are now developing their flower-stems, and whether there be weeds to be seen or not it will be well to stir the surface soil with the Dutch hoe. Then provide each plant with the sticks necessary for supporting the flower-stems, in readiness for tying the stems as they grow.

Azalea mollis.—Plants which have flowered under glass, when they have been hardened off, may be planted out in the grounds or in beds. If it is preferred to plant them in beds, afford each plant sufficient space to allow it to develop fully, or it will not flower freely, and the result will be unsatisfactory. Remove all seed capsules from young plants of Azaleas and Rhododendrons that have flowered in the open. Good-sized plants of Azaleas, growing over grass, and about 30 feet apart, have a more pleasing effect than when planted in a mass in a bed having but little shape or outline.

Conifers.—May and early June is probably the best time for seeing Conifers in their full beauty, and a note may be taken of varieties it will be advisable to plant next season. *Cedrus atlantica aurea* is exceedingly striking, and so far promises to be a useful addition to ornamental trees. Planted at a suitable distance from the Copper Beech, the two colours afford a pleasant contrast. *Cupressus macrocarpa aurea* or *lutea* is another addition to golden Conifers. Whether this will attain to the dimensions of *C. macrocarpa* remains to be seen. At present it does not show so much colour as does the Cedar, and it is said to assume the normal green in the second year. *Cupressus* or *Retinospora filifera aurea* is a smaller-growing plant. It does not assume the rusty appearance common with some of the *Retinosporas*, but retains its golden colour all the year through. *Abies sachalinensis* is another pretty Conifer, but must not be planted in a position where it will make its growth early, nor in low-lying situations subject to late spring frost. *Abies numidica* or *baborensis* is a distinct-looking tree, and so far it thrives well here in a low and moist position.

General Remarks.—Continue to put out bedding-plants, delaying the most tender species until the nights are a little warmer. The watering of newly-bedded plants should be done early enough in the day for the plants to become dry overhead before night. Any plants liable to become burned or scalded when first planted should be afforded a slight protection by inserting a few branches of Spruce Fir or Laurel in the beds, which may be removed from the beds in the course of a week or so.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HUSSEY PACKE, Esq.,
Prestwold Hall, Loughborough.

Plants in Pots and Frames.—Seeing that most bedding-plants may now be put out-of-doors, the vacated frames and pits may be utilised for the cultivation of plants for the conservatory. Such plants will consist of Heliotropes, Balsams, Coxcombs, Celosias, Torennias, Salvia splendens, and tuberous-rooted Begonias that were potted at an early date. Most of the above will be fit to be potted for the last time; and for kinds of soil, &c., I would refer my readers to previous calendars. Let the frames be closed about 3.30 P.M., with an overhead syringing afforded. On warm nights the lights may be removed, and put on again at 6 A.M. Late-struck plants of Eupatoriums, Tropæolums, Jacobinia pauciflora and J. penrhosiensis, may be afforded a slightly warmer treatment, so as to hasten growth, and get them sufficiently large for decorative purposes. Let them be kept in a less-fully ventilated house, syringing them daily until the pots fill with roots, and then allow the sunlight to reach them, in order to ripen the growths, for without this no satisfactory flowering can be expected.

Primulas and Begonias.—Prick off seedlings of P. sinensis, affording them shade and a close frame for a time. Seedling tuberous-rooted Begonias may now be potted from the boxes in which the plants were pricked out, and be placed in an intermediate-house or pit, standing the pots upon a bed of coal-ashes.

Begonia Gloire de Lorraine and other Begonias with fibrous roots may be transferred to 3-inch pots, and to a frame having a warmth of 60° to 65°, syringing them thrice a day, and affording shade from strong sunshine. Remove all flowers as soon as they appear, and encourage growth by closing the frames, &c., by 3.0 P.M. Fumigate the plants occasionally.

Eulalias.—The root-masses of those useful decorative grasses, E. japonica and E. zebrina, if an increase be desired, may be divided and potted in 4½ and 5-inch pots, making use of a compost consisting of loam, leaf-mould and sand. Eulalia japonica should be afforded rather more warmth than E. zebrina, the latter being grown in the greenhouse, or planted outside during the summer season.

Gloxinias.—The early plants are now in bloom, and should be massed at the cooler end of the stove, and not wetted with the syringe, or the beauty of their flowers will be spoiled. Seedlings may now be potted in 3-inch pots, and placed in a warm pit near the glass, and be shaded from the sunshine.

Gesneras.—The tubers should now be started successively, those of G. zebrina being put to the number of five in a 6-inch pot, and grown on in this to the flowering stage. The bulbous G. cinnabarina may be started in a 3-inch pot, to be ultimately transferred to a 6-inch one. A good sort of compost consists of two-thirds loam, peat one-third, with a small quantity of leaf-mould and sand. Place the potted tubers on a shelf in the stove, afford water when growth commences, and do not syringe them, or the foliage will become spotted.

Draenas.—Rooted cuttings, tubers, &c., should be potted in small 60's, and given a position near the glass in the stove or stove-pit, keeping them shaded and syringed till they are re-established. The rooted tops of old plants may now require a shift.

Ophio-pogon Jaburum variegatus.—This decorative greenhouse plant may now be re-potted or divided. The plant succeeds in a compost of loam (three parts) and leaf-mould (one part), with some sharp sand. Place in a greenhouse-frame or the greenhouse till re-established. Small plants are useful for a variety of purposes in house decorations.

Affording Water.—Plants which have filled their pots with roots soon need much care in order to prevent injury from the soil getting unduly dry, and in all cases water should be applied in the afternoon in a regular way, although if a plant needs water there should be no delay in affording it.

THE HARDY FRUIT GARDEN.

By C. HERRIN.

Applying Mulches.—The spell of warmth, accompanied as it has been with winds from East and North East, has made the soil dry on the surface, and extracted the moisture to a considerable depth, and it will be prudent, taking the character of recent summers into consideration, to afford mulches to the bush-fruit quarters as far as the quantity of material will allow. The Peach and Apricot borders should also be examined, abundance of water being afforded if the soil shows dryness. If the surface be caked, slightly break it up previously with a digging fork or "gratt." Before applying water, let a good mulch of long stable litter be laid on the soil. Light soils, carrying Apple, Pear, &c., will be benefited by an application of manurial mulches. If young fruit-trees are growing very vigorously, it may be prudent not to afford any manurial mulch, but to hoe the surface once in three weeks, which will answer the purpose and yet not unduly force growth.

Strawberry Plantations.—If the mulch that has been applied is found to be insufficient in quantity to preserve the fruits in a clean condition, additional litter should be forthwith laid around the plants.

Raspberries.—The plants will now be growing rapidly, and the suckers of this year that will be the fruiting canes of next year should be selected, and unless some are required for transplanting next autumn, not more than five per stool should be retained, the remainder being pulled up, not cut off. Canes for forming new plantations should be left at points distant from the stools. The canes of autumn-fruiting varieties should be afforded plenty of space, and be tied at wide distances apart to wires or stakes. The Raspberry requires a moist soil, and a mulch of half-rotten manure should be afforded forthwith, letting it cover the soil for at least 3 feet on each side of a row. Should mulching not be possible, the borders should be frequently hoed. As soon as the blossoms have set, apply liquid-manure, more especially to aged plantations.

Insects.—Green-fly will soon make their appearance, the drying winds of the past few weeks having favoured their development. Against this pest, the best washes are soap-suds made with soft-soap; quassia-water, made to adhere to the shoots and foliage by the addition of soft-soap; and, failing these, the garden-engine and clear water applied with considerable force from all sides. This last remedy must be put into force daily till the pests perish from lack of food, whereas it will suffice if the other remedies are applied once a week. Not all the aphids are to be found on the fruit-bushes and fruit-trees, and an eye should be kept on other subjects that are likely to be infested, and a taste of the remedies applied to them as well. That is one of the benefits arising from the destruction of weeds in the fruit quarters, many of which afford food to aphids.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. I. MEASURES, Esq.,
Cambridge Lodge, Floddon Road, Camberwell.

Thunias.—Plants of Thunia Marshalliana, T. Veitchii, T. Bensoniae, T. alba, and other species whose flowers are now about to expand will need every encouragement, and the pots being filled with roots they must never become dry. A small quantity of farm-yard manure-water applied with the rain-water used once or twice a week will be found of advantage at this season. As soon as the plants are out of flower let them be removed to a bright, sunny spot in a house where they can be afforded free ventilation and every aid to mature their growths. Red spider is one of the worst insect pests infesting Thunias under the dry conditions of the ripening period, but these may be removed by carefully sponging the leaves, &c., syringing the plants occasionally with XL-all, mixed in the manner indicated in the instructions printed on the labels.

Cypripediums belonging to the western section that are botanically classed as Selenipediums, are very liable to decay at the base during the warmer months from the moisture that accumulates in the centre of the growths and axils of the leaves, or from the use of rain-water deposited by thunderstorms, and not sufficiently warmed. This cold rain-water chills the roots and gives the cultivator a considerable amount of trouble and anxiety, for the loss of the plants may very possibly follow such chills. The species which are the most liable to be affected

by "damp spotting" at the bases of the leaves are imported plants of Selenipedium macrochilum (one of the finest hybrids of this class), S. grande, S. Schroderae, S. albo-purpureum, S. nitidissimum, S. Lindleyanum, and S. caudatum and its varieties, after they have been under cultivation for a few years. Where the spotting occurs on the outer leaves first, it is advisable to forthwith remove the leaves at a point as near to the base as possible, and sprinkle some charcoal powder or flowers of sulphur about the affected plants, and to allow the compost to become dryer about the base of the plants. If the plants are placed in a dryer and brighter position, they are more easily dealt with, and the spotting is less liable to increase. Some of the species mentioned may be producing their new roots at this season, and when that is the case the plants should be repotted or top-dressed as may be found necessary. These Selenipediums should be abundantly supplied with moisture for the greater part of the year, and it is therefore advisable to afford them plenty of drainage materials and a rougher and more porous compost than that required by the eastern section of Cypripediums. Owing to their abundant rooting nature, the pots should be sufficiently large to contain the plants without cramming them into the pots. Let the compost be made moderately firm, and place the plants fairly low down, otherwise the loss of their lower leaves will soon give them a bare appearance. The stock of any one of those named may be increased by dividing the growths at the annual re-potting.

Odontoglossum grande, although long under cultivation, is not now frequently met with. Flowering in the late summer months, when Orchid flowers are not very abundant, it is a most useful plant for affording cut flowers; moreover, it is an attractive subject when arranged with other plants and flowers at exhibitions. The plant has recently been imported in large numbers, and these importations have become pretty generally distributed throughout the country. I find this species to do best when placed in the warm intermediate-house during the growing season. The imported plants should be potted when received in well-drained pots, and in a compost consisting of two parts turfy-peat to one of sphagnum-moss. Let the plants then be afforded water in quantity, and be arranged in a light position, much care being taken of them at the first, but as soon as the plants have started vigorously into growth they should be afforded liberal treatment. After flowering, and when the growth is matured, remove to a cooler house, and keep them drier during their lengthy season of rest.

PUBLICATIONS RECEIVED.—*Annales Agronomiques*, Avril 25. Includes articles on "Co-operation Agricole dans les Iles Britanniques" par M. Albert Dulac, and "Nouvelles Recherches sur l'Inoculation du Sol avec l'Alinite," par M. L. Malpeaux. — *Revue de l'Horticulture Belge et Etrangère*, May 1. With plate and description of Anthurium Andreanum var. Souvenir d'Edouard Pynaert, and various useful articles; notably one (illustrated) on "Les Chênes d'Amerique et leurs Glands" (American Oaks and their acorns). — *Botanisches Centralblatt*, Band 86, No. 5. — *Die Gartenswelt*, April 27. — *L'Italia Agricola Giornale di Agricoltura*, Aprile 30. — *Cryptogamæ Japonicæ Iconibus Illustratæ*; or, Figures with brief descriptions and remarks of the Musci, Hepaticæ, Lichenes, Fungi, and Algae of Japan. Edited by J. Matsumura and M. Myoshi. Tokyo. Vol. I., No. 12, February 25. — *Phanerogamæ et Pteridophytæ Japonicæ Iconibus Illustratæ*; or, Figures, with brief descriptions and remarks, of the Flowering Plants and Ferns of Japan, by T. Makino. Tokyo. Vol. I., No. 10, February 25. — *The Botanical Magazine* (Tokyo), February 20, with the following articles:—"Notulæ ad Plantas Asiaticas Orientales," by J. Matsumura; "On Sasa, a New Genus of Bambusæ, and its Affinities" (with Pl. 1), by T. Makino and K. Shibata; and "Observations on the Flora of Japan" (continued), by T. Makino. There are also contributions in Japanese. — *From the Michigan State Agricultural College, Bulletin No. 186*, December, 1900. — *First Report of the Upper Peninsula Experiment Station*. With many illustrations. Satisfactory as regards promise for the future. — *Florists' Exchange* (New York), April 20. — *The Weekly Florists' Review* (Chicago), April 18. — *Gardening* (Chicago), April 15. With pretty illustrations of a pendulous Blue Spruce and other plants and landscapes.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Illustrations.—The Editor will thankfully receive and select photographs of structures, suitable for reproduction, of gardens, of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Local News.—Correspondents are requested to send to the Editor, only statements of local events likely to be of interest to our readers, and to refrain from matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions, or to return unsolicited communications or illustrations, unless by special arrangement.

APPOINTMENTS for the Month of JUNE.

SATURDAY,	JUNE 1	Royal Botanic Society, Meeting.
SUNDAY,	JUNE 2	Ghent Horticultural Exhibition.
TUESDAY,	JUNE 4	Royal Horticultural Society's Committee, Meeting.
THURSDAY,	JUNE 6	Linnean Society, Meeting.
TUESDAY,	JUNE 11	Cambridge Horticultural Society's Show. Horticultural Show at Evesham, in connection with the Hereford and Worcestershire Agricultural Society (3 days).
WEDNESDAY,	JUNE 12	Yorkshire Gala and Horticultural Exhibition, at York (3 days). Royal Cornwall Agricultural Association, Show at Bodmin (2 days).
TUESDAY,	JUNE 18	Royal Horticultural Society's Committee, Meeting. Royal Oxfordshire Horticultural Society's Show, at Oxford.
THURSDAY,	JUNE 20	Linnean Society, Meeting.
WEDNESDAY,	JUNE 26	National Rose Society's Show, in connection with the Richmond Horticultural Society.
THURSDAY,	JUNE 27	Colchester Rose and Horticultural Society's Show. Société Nationale d'Horticulture de France (Orchid Show).
SATURDAY,	JUNE 29	Windsor and Eton Rose Show, in Eton College Grounds.

SALES FOR THE ENSUING WEEK.

MONDAY and TUESDAY NEXT.—Two days' Sale of the Hazelbourne collection of Orchids, at Protheroe & Morris' Rooms, 17 & 18, Cheapside, E.C.

TUESDAY NEXT.—Unreserved Sale at the Mile Ash Nurseries, Duffield Road, Derby, by order of Mr. F. Lewis, by Protheroe & Morris.

FRIDAY NEXT.—Sale of Imported and Established Orchids, a so Orchids in Flower, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick—59.4.

ACTUAL TEMPERATURES:—

LONDON.—May 29 (6 P.M.): Max. 82°; Min. 58°.
May 30.—Warm, dull, some rain.

PROVINCES.—May 29 (6 P.M.): Max., 76°, home counties; Min., 49°, Orkneys.

The Cultivation of the Apple, and its Food Requirements.

THE main reasons for the failure of trees to produce a successful crop of fruit are starvation and neglect. Cultivators frequently spend large sums of money in fertilising vegetables and other crops, but they seem to think that because trees in the forest take care of themselves, that orchard trees can do the same. But natural conditions, such as we find in the forest, are not the conditions needed by the fruit-trees. Nature is perfectly satisfied with a little Crab-Apple if the tree has the robustness of constitution to survive in the struggle for existence in the forest. Nature cares nothing for the quality of the fruit, if the tree is vigorous, and develops seed in plenty. But man's wants are different. We want a tree that will produce abundant crops of fine fruit. We ignore everything else to get this, the result being a plant that needs the fostering care of man to save it from extinction by robust wildlings. We have removed the plant from natural conditions, and we must take care of it, if we wish to preserve it.

Soil exhaustion is the cause of more failures in fruit growing than all other causes combined. Men realise that annual crops need feeding, but they do not realise that the trees in the orchard need feeding, nor, that they are removing more plant-food from the soil than by the annual crop. But this is true, nevertheless, for a good crop of Apples will remove as much mineral food substance from the soil as three crops of Wheat. And yet men expect the Apple-orchard to produce fruit indefinitely, and possibly at the same time grow grass or some other crop between the rows of trees. And when the soil declines to respond and give fruit, when the plant-food to make it is no longer there, men say the climate has changed, and that fruit cannot be grown as once it could.

It is doubtless true that orcharding requires more constant attention and more hard work than it formerly did. Not only is the soil exhausted of the food that the trees need, but the enemies of the tree and fruit have certainly increased with the increase of cultivation and commerce, by which injurious insects of other countries are introduced into our own orchards. Hence, the man who expects to succeed in fruit-growing to-day must be a student and a worker, ever on the alert to discover new enemies, and to prevent the attacks of the old ones too. He should study the habits of insects, so as to be able to distinguish friends from foes. He should get acquainted with the low plant-organisms that cause rust and blight, and the best means of combating them.

Our comments are founded on a very interesting paper by Mr. W. F. MASSEY, the horticulturist of the North Carolina Experiment Station. From it we extract the following details:—

ANALYSIS OF THE APPLE-TREE AND ITS PRODUCTS.

Apple-tree leaves collected in the month of May contain water, 72.36 per cent.; ash, 2.33 per cent.; nitrogen, 0.74 per cent.; phosphoric acid, 0.25 per cent.; and potash, 0.25 per cent. Leaves collected in September contain water, 60.71 per cent.; ash, 3.46 per cent.; nitrogen, 0.89 per cent.; phosphoric acid, 0.19 per cent.; and potash, 0.39 per cent. These facts show that there is a tendency of the phosphoric acid to return to the branches and the trunk of the tree at the ripening period.

Apple-fruit contains water, 85.30 per cent.; ash, 0.39 per cent.; nitrogen, 0.13 per cent.; phosphoric acid, 0.01 per cent.; and potash, 0.19 per cent.

The wood of the whole tree—roots and branches—average: water, 60.83 per cent.; ash, 1.50 per cent.; nitrogen, 0.35 per cent.; phosphoric acid, 0.05 per cent.; and potash, 0.17 per cent.

A mature Apple-tree, weighing 1 ton, would contain in its wood alone, 7 lb. of nitrogen, 1 lb. of phosphoric acid, and 3½ lb. of potash. Estimating the crop of Apples at 10 bushels for such a tree, and there will be taken from the soil in the fruit alone about 0.8 lb. of nitrogen, 0.2 lb. of phosphoric acid, and 1.14 lb. of potash. Estimating forty such trees growing on an acre of land, they would remove from the soil in such a crop as described per acre, 32 lb. of nitrogen, 8 lb. of phosphoric acid, and nearly 46 lb. of potash.

As a comparison with the above figures, it may be of interest to state that a crop of Wheat of 20 bushels per acre would remove from the soil in grain and straw, about 29 lb. of nitrogen, 9 lb. of phosphoric acid, and 5 lb. of potash.

It will be seen from these facts that the demand upon the soil, and especially in potash, is far heavier for a crop of Apples than for a crop of Wheat. Farmers understand easily the reason for applying manurial fertilisers for the

Wheat crop, but imagine that the orchard needs no manuring, and when the trees fail we are told that "we cannot grow fruit as we formerly did." The real reason is, however, soil exhaustion. It has taken a great deal of plant-food to build up the big tree and supply its annual crop of leaves and fruit; and in many cases there has been a crop taken annually from the land besides. And when we consider that a ton is a small estimate for the weight of a full-grown Apple-tree and roots, the need for annually keeping up the fertility of the soil becomes more apparent.

THE RECENT TEMPLE SHOW.—In supplement to our detailed report published in last week's issue, of this popular and representative display of horticulture, we are now able to afford our readers a series of photographs obtained in the tents on the second day of the show, by our artist, Mr. A. E. SMITH. The conditions under which these photographs have to be taken, and the crowding together of the plants, imposed upon exhibitors to some extent by the insufficiency of space obtainable, make the work of the photographer a most difficult operation, and our reproductions of them are therefore not always so good as we should like them to be. The exhibit of Moss Roses flowering in pots, shown by Lord ROTHSCHILD, and described by us last week, was quite novel, and was much admired, as we have seldom seen this type of Rose displayed in the same manner. At fig. 129, p. 347, the method of staging them may be seen, and the effect would perhaps have been better had some of the plants been raised, to have produced a little informality of outline. Mr. RUSSELL's group of pigmy trees, illustrated on p. 345, is but one of several exhibits of Japanese specimens of tortured, crippled nature, that were to be seen at the show in greater numbers than we have hitherto observed at an English horticultural exhibition. The Japanese are certainly adepts at the art of making some of the greatest of the world's forest trees available for the ornamentation of the dinner-table, even when they are half a century or more old. For such extreme culture as this we have no admiration, though doubtless the unnatural specimens possess a certain amount of interest. Nearly allied to such exhibits are the Larches shown by Mrs. HART of Totteridge, which were trained into various shapes. We have illustrated representations of a stork, and of a junk on p. 352. Messrs. CARTER's zoological specimen on p. 353 is of a different character. The Davallia roots of which it is formed, are imported into this country in a resting condition. The roots are so long and so pliable that they are made into whatever form is desired, even that of an elephant; and after they have developed fronds, the Ferns have a considerable fascination for the general public, some members of which probably believe them to be natural in material and shape. After last week's issue was published, we were surprised to find that we had omitted reference to Messrs. BENJ. R. CANT & SON's Roses. This firm exhibited a group of Roses in pots, not large plants, but young ones, and bearing some very fine blooms, of which those of General Jacqueminot, Ulrich Brunner, W. A. Richardson, and Mrs. Sharman Crawford, were excellent. Messrs. KELWAY & SON write us that they were awarded a Silver-gilt Medal, not a Silver Banksian as reported, but as we were supplied with an official list of these awards, we must refer our correspondent to the Society's clerks, who, like our own reporters, were very much overworked during the time the show was held. To Mr. J. KEY ALLEN, of St. Aubin's, Bitterne Park, Southampton, who exhibited some Peas at the show, we tender our regret that our reporter should have made that gentleman live at Northampton. The Temple Show of 1901 was as good and as varied as any of the previous exhibitions in the Temple

Gardens, and though there have been very many suggestions and criticisms expressed in regard to it (some of which we believe to be useful and practicable) we think there is a danger that the Society and its executive may be blamed for circumstances that are beyond their control. There are restrictions respecting space and other matters imposed by the Benchers of the Inner Temple, which the Royal Horticultural Society is obliged to respect and observe to the letter, and this fact is a very unpleasant one when struggling in one of the smaller tents in an endeavour to force one's way through a close, almost stationary throng, there is a desire that the Society would provide more spacious and better ventilated tents. It would do so if it could.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the committees will be held on Tuesday, June 4, in the Drill Hall, Buckingham Gate, Westminster, when a lecture on "Recent Discoveries in Heredity," will be given by Mr. W. BATESON, M.A., F.R.S., at 3 o'clock.

LINNEAN SOCIETY.—The anniversary meeting was held on the 24th inst., when Professor VINES, the President, took occasion to pass in review the principal work done by the Society at various periods of its existence, and sketched in a brief but luminous manner the labours of the zoologists and botanists who have contributed to its publications. At the conclusion of the address, the President handed to Mr. C. B. CLARKE for transmission to Sir GEORGE KING, lately superintendent of the Royal Botanic Gardens, Calcutta, the medal awarded to him in recognition of his distinguished services to botany. This medal is awarded annually to a distinguished zoologist or to an eminent botanist alternately. The honour is not confined to British subjects, or even to Fellows of the Society; hence it is deservedly considered to be a mark of great distinction in the scientific world.

— On the occasion of the evening meeting on Thursday, June 6, 1901, at 8 P.M., the following paper will be read:—"On the Necessity for a Provisional Nomenclature for those Forms of Life which cannot be at once arranged in a Natural System" (adjourned discussion), by Mr. H. M. BERNARD, F.L.S.

PLANTS AT THE TEMPLE SHOW.—Mr. C. H. WRIGHT favours us with the following comments on some of the plants exhibited. Of course, we can only take the names as we find them:—"In order to prevent confusion, it may be well to point out that the plant figured on p. 335 of the current volume of the *Gardeners' Chronicle* as *Musa rubra* had previously been called *Musa sapientum* var. *sanguinea*, Welwitsch (RIDLEY in *Journ. Bot.*, 1887, p. 134), which name is retained as valid in the *Flora of Tropical Africa*, vii., p. 331. This plant, which is distinguished by the reddish tint on the leaves and trunk, is a native of Angola and the Congo region. It has nothing to do with *Musa rubra*, Wall. (KURZ in *Journ. Agri-Hort. Soc., India*, xiv., 1865, p. 301), which is regarded by Mr. J. G. BAKER, F.R.S., as a good species in his monograph of the genus in *The Annals of Botany*, vii., p. 221; and is said to be a native of Southern Burmah. This latter takes its name from the red spathe.

Tulipa mauriana is a native of Savoy, not of Asia Minor, as stated on p. 326; and is well figured in JORDAN and FOURREAU'S *Icones Fl. Eur.*, t. 20. It is sometimes regarded as a variety of *T. Didieri*.

Iris flavissima was described in *Pallas's Reise*, iii., p. 715, introduced into cultivation in 1814, and figured in *Jacquin's Icones*, t. 220. It is a native of Siberia and Mongolia, and occurs on the mountains of Turkestan up to an elevation of 6000 feet. C. H. Wright."

PROLIFEROUS LILY OF THE VALLEY.—Mr. J. VRENGDENHILL has sent us specimens of this curious variety. Where, under ordinary circumstances, there is a solitary flower-bell pendulous from a

short stalk, there is in the prolific form a dense cluster of flowers, of which the terminal one expands first, and the others in succession from above downwards, thus forming a cymose raceme. The condition is not recorded in Dr. MASTERS' *Teratology*, so far as the Lily of the Valley is concerned; nevertheless, we have an impression that it is figured or described in some of the old herbals.

STREPTOCARPUS.—Mr. J. LAING & SONS send us specimens of *Streptocarpus* singularly deformed. In the one case there is a fusion of two flowers into one regular funnel-shaped, erect blossom. In the other case there is fasciation of the flower-scape, and not one, but several flowers have become united, split open on one side, and expanded so that the flower looks more like a *Petunia* than a *Streptocarpus*. We do not suppose the peculiarity will be repeated next year.

FLOWERS IN SEASON.—Some pretty *Carnation* flowers are sent us by Mr. H. T. DIXON, Woodside Gardens, Hailsham, Sussex, who is engaged in the cultivation of *Carnations* for commercial purposes. Several of Mr. MARTIN SMITH'S varieties of the *Souvenir de la Malmaison* type are represented by fine flowers. These include Mrs. Martin Smith, clear rose colour; Calypso, almost white, but lacking the salmon coloured centre this variety generally exhibits; Mrs. Trelawney, of very fine form, colour reddish-carmine; and Trumpeter, a strongly perfumed flower of bright crimson colour. Of other varieties included, Cecilia has clear yellow flowers, as large as those of a *Malmaison*; Francis Wellesley, a good border variety, colour rosy-carmine; Czarina, a large flower, yellow ground marked heavily with bright red colour; Effie Deans, yellow, except for tint of pale lilac colour on the margins of petals; Robert Burns, salmon shade of rose colour; Agnes Sorrel, very deep crimson colour, but a thin petal; Benbow, reddish-buff colour; Lady Hindlip, a border variety with crimson flowers of good petal; and Brodrick, yellow ground, marked with red and purple.

— We have received three very pretty *Carnations* from Messrs. H. & J. ELLIOTT, of the Court Bushes Nurseries, Hurstpierpoint, Sussex. One of these is named Khaki, a buff-coloured flower of moderate size; another, South Saxon, which has a yellow ground, flaked with rose and heliotrope, large and very fragrant; and the third, Gentle Peace, a most charming pink-coloured variety, and very fragrant.

An early-flowering variety of *Chrysanthemum maximum*, under the name *Daviesii*, was sent to us on May 22 by Mr. JOHN DAVIES, Great Meols Nurseries, Hoylake, Cheshire, who states that although most of his plants are very late this year, the variety under notice has bloomed as early as it did last season. Our correspondent has possessed this variety for five years, and has sent a photograph of some flowers that was taken on May 31 of last year, which we do not reproduce, as *C. maximum* is well known, and this variety appears to differ from the type very little, except in its early flowering qualities. *C. maximum* is one of the finest of hardy plants for supplying flowers for cutting.

PRIMULA OBCONICA.—The *Revue Horticole* of May 16 gives an illustration of a double form of this species, which gives good promise as the precursor of a new race.

AN APPEAL ON BEHALF OF THE CHILDREN.—With your kind permission I venture to appeal to your readers on behalf of little children of the London slums, who, far from knowing the delight of having a garden of their own, have never even experienced the pleasure of picking flowers—for in the parks that, very properly, is forbidden. Each year the Ragged School Union takes away some thousands of such children for a first sight of the sea, and a first experience of free country life at one of its seaside homes at Bournemouth, Southend, Margate, &c. Last year the number was over 6,200; this year we hope to give a fortnight of fresh air, good food, and healthy play, to an even

larger number. The cost of a fortnight's holiday in one of our seaside homes is only 10s. for each child; and—if I may be allowed to put it in this way—by making perhaps the old lawn-mower do again for this season, or by giving up the idea of adding to the greenhouse, or in some other direction of self-denial, your readers could give an untold amount of pleasure to the children who do not know a Tulip from a Foxglove. If any of your readers are able to help us, I shall be happy to receive and acknowledge any contributions that are sent to me. John Kirk, 32, John Street, Theobald's Road, W.C.

CANNED FRUITS, ETC., AND THE SUGAR DUTY.—An old correspondent, dissatisfied with the information to hand concerning the incidence of the new tax in relation to sugar, applied to the Chancellor of the Exchequer for aid. To this he has received the following reply, which will doubtless be interesting to some others besides our correspondent:—"Fruit preserved in sugar (provided the fruit is not dutiable under any other heading of the tariff) will be liable on importation to a duty assessable on the amount of sugar used in its preparation."

DECIMAL COINAGE.—The proposed issue of a new coinage has again brought the advantages of the decimal system into notice, and it is suggested that the forthcoming changes should be extended, that the coins may conform to this notation. Colonel J. T. BUCKNILL has issued a prospectus of a scheme of decimal coinage necessitating comparatively few alterations, which he wishes to bring forward in every way possible to induce popular feeling to acknowledge its convenience, and work forward for its institution. The scheme involves giving a new face value to the copper coins, and minting two new silver coins of small value to supersede threepenny-pieces.

THE SMITHSONIAN INSTITUTION.—The Annual Report (to June, 1898) of the Board of Regents of the Smithsonian Institution is now before us. In addition to the annals of the society there is a general appendix composed of papers on Recent Progress, by the aid of Photography, in the Study of the Lunar Surface, by MM. LOEWY and PUISEUX; Perception of Light and Colour, by GEORGE LECHALAS; Relation of Plant Physiology to Other Sciences, by JULIUS WIESNER; Our Present Knowledge of the Origin of Man, by ERNST HAECKEL; Recent Advances in Science and their Bearing on Medicine and Surgery, by R. VIRCHOW; and other papers of scientific and general interest. Those here named afford an idea of the diversity of the subjects under discussion, which are all in keeping with the general standard and scope of the publication.

THE CALIFORNIAN ORANGE CROP.—The Californian Oranges have completely supplanted the South European and Jamaican Oranges in the North American States. In the present year the crop was so large that there was no sale for them in the States. In February and March 2,000 waggon loads reached New York alone, and in the last week of March about 200 waggon loads were sold in that city by auction, at prices, which afforded no profit whatever to the producers or consignees. The first attempt was made this season to export the fruit to Europe, and the returns have been of such a nature as to warrant much larger consignments being made, especially to Germany.

MILDEW OF CHRYSANTHEMUMS.—*Le Chrysanthème* for February contains a paper by M. CHIFFLOT, chef de travaux à la Faculté des Sciences, on *Chrysanthemum rust*, in which he proposes the following methods of dealing with the complaint:—

"1st, *Winter Treatment.*—When *Chrysanthemums* have done blooming the leaves dry and fall off. It is then that the leaves of affected plants should be carefully collected and then burnt, to prevent the germination in spring of winter spores. The surface of the pots should be sprinkled over,

when the old stems are cut off and burnt, with a solution of pentasulphide of potassium, 3 or 4 grammes to the 1000 of water. This solution, innocuous to the plants, kills the winter spores.

"2nd, *Spring Treatment*.—Chrysanthemum growers who prefer late budding, should choose buds not infected with disease, and before putting them into a frame should plunge them into the above-mentioned solution. When budding is effected, careful examination should be made to see that no pustules appear on either surface of the leaves before the plants are put into the open ground. When they are set out a vigorous sprinkling of pentasulphide should be given over the young buds and over the soil. Growers who practice early budding should practise this treatment together with the winter treatment. These two operations, to be entirely successful, should be effected with the greatest care. As soon as any leaf shows a pustule it must be carefully cut off and burnt.

"3rd, *Summer Treatment*.—In summer the pustules form rapidly, and the uredospores grow very quickly. It is then the season when Chrysanthemum growers should give daily attention to the foliage of their favourite plants. A single contaminated specimen is sufficient to infect the whole collection, and this is the reason why few large plantations are free from the pest.

"Removal and burning of affected leaves and the application of pentasulphide in the proportion before mentioned monthly on both surfaces of the leaves, and on the soil itself, are effective means of combating the disease (as has been proved in the Lyons parks). These are preventive measures, and they alone are effectual. There is little or no result obtained by dosing with pentasulphide, or permanganate of potash or sulphide of calcium plants already seriously affected. It is no use waiting the appearance of the disease before treating it."

AGRICULTURAL STATIONS.—According to a report issued by the U.S. Department of Agriculture, there are now 54 such stations scattered through the several States of the Union, employing 678 persons, including 77 horticulturists, 52 botanists, 48 entomologists, 7 biologists, 20 mycologists and bacteriologists, together with garden superintendents. Annual reports to the number of 445 are published. Thousands of horticultural and agricultural experiments are carried on, to the great advantage of the cultivator. It is distressing to an Englishman to see how greatly his country is behind the United States and many of the continental countries in these matters.

"OPEN-AIR GARDENING."—Such is the title of an abridgment of the earlier work entitled *The Book of Gardening*, edited by W. D. DRURY, F.E.S., and published by L. UPCOTT GILL, in the Strand. The book will be welcomed by many who find the larger works on gardening too expensive or too diffuse, and the smaller manuals not sufficiently elaborated for their use. As our population increases, and especially the suburban inhabitants of great towns, so does, *pari passu*, a taste for the pleasures of the garden; and it is to afford these owners of small gardens the knowledge of which most of them stand in need, which is the object of the editor. The book is profusely illustrated, and most of the sections into which it is divided is furnished with a select index of the plants of which the sections treat; and the cultivation of fruits and vegetables, as well as flowering plants, receives appropriate notice.

THE ABERDEEN CHRYSANTHEMUM SOCIETY will hold its next annual exhibition on Nov. 22 and 23. The schedule of prizes is just to hand, and includes eighty-six classes, which provide for some fruits and vegetables, as well as for exhibits of the Autumn Queen. The secretary is Mr. H. M. SINCLAIR, 18, Market Street, Aberdeen.

THE NATIONAL ROSE SOCIETY has now issued the schedules of prizes to be offered at the three exhibitions to be held during the season that is

immediately before us. The dates of these exhibitions we have already published, but it will serve to remind our readers if we repeat them, and so prevent misunderstanding arising from the alteration the Committee has felt it necessary to make in



FIG. 130.—JAPANESE STORK EXHIBITED AT THE TEMPLE SHOW BY MRS. HART, FAIRLAWN, TOTTERIDGE. (SEE P. 350.)

respect to the date and place of the metropolitan exhibition, since the Hon. Secretaries supplied us with information published in our Almanac at the beginning of the year. The first will be at

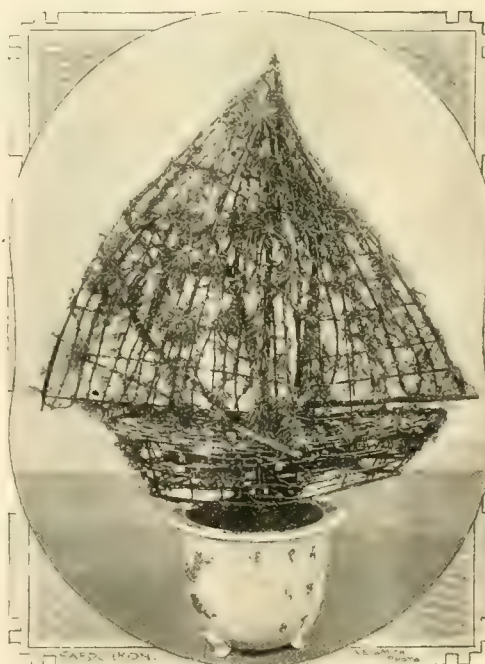


FIG. 131.—JAPANESE SHIP EXHIBITED AT THE TEMPLE SHOW BY MRS. HART, FAIRLAWN, TOTTERIDGE. (SEE P. 350.)

Richmond, in the Old Deer Park, on Wednesday, June 26, and entries should be addressed to the Hon. Sec., National Rose Society, 61, George Street, Richmond, on or before June 22. The metropolitan exhibition, which is generally the finest of the

three, will be held on July 4, in the Inner Temple Gardens, Thames Embankment, London, where the Royal Horticultural Society's shows have been held for some years past. Entries should be addressed to 2, Clifton Gardens, Chiswick, on or before June 29. The northern exhibition will be held at Ulverston, in Todbusch Park, on Wednesday, July 17, and entries should be addressed to Ulverston, not later than July 13. The National Rose Society will also offer prizes for competition at a Drill Hall meeting of the Royal Horticultural Society, to be held on July 2. The report of the Society is satisfactory, and the suggestion "that a reserve fund be at once set on foot," is one worthy every support from those interested in the Society's future. The total number of members is 584, or more than at any preceding time.

BOTANY IN LONDON SCHOOLS.—For some time past the London County Council has made a provision of beds in several public parks, such as Ravenscourt, Battersea, and Victoria, with the view to lend assistance to scholars at elementary and secondary schools in the study of botany. About twenty beds are arranged at each of these parks in close proximity to the paths, each containing specimens of a distinct order of plant—the label on each carrying the common and Latin name. School teachers should take advantage of these little botanic gardens, and they can obtain from the Council's Technical Education Board, orders enabling them to have the loan of such specimens as may be needed for class purposes.

FUMIGATION WITH CYANIDE OF POTASSIUM.—We extract the following notes from the *American Nurseryman*:—

"The most important matter which confronts us to-day is the San Jose scale. It may mean the destruction of our orchards. All are asking—can it be held in check, or eradicated, by any known means, except the total destruction of large trees? Our firm has not, during the past two years, planted a tree which has not been fumigated with hydrocyanic gas. We do it cheaply, quickly, and without injury even to Peach-trees, notwithstanding the a-ersion of nurserymen that it is unsafe, expensive, and dangerous. One of the largest nurserymen in Western New York, who has fumigated for several years all the nursery stock he sells, says the expense does not exceed 25 cents per 1000 trees of regular dollar size. If all planters would refuse to buy trees not fumigated, the nurserymen would see it for their interest to fumigate. No trees can be shipped into Canada without fumigation.

"We repeat Professor W. G. Johnson's directions for fumigating nursery stock:—

"Trees should be dug from the nursery and loosely packed in the house, either on end or flat on the floor. The chemicals used are as follows:—

- "1. Cyanide of potassium (98 to 99 per cent. pure).
- "2. Sulphuric acid (specific gravity 1.83).
- "3. Water (clean).

"First, measure the acid in a glass beaker with the ounce mark on the side, and pour it in a 2 or 4 quart earthen jar. Do not use iron or metal vessels of any kind, as the acid will ruin them. Second, measure the water, and pour this on the acid. Third, drop the cyanide, paper and all, into the liquids, and close the door, lock it, and leave exposed for at least half-an-hour. No person should be permitted to enter the building. One man should always be responsible for the fumigation, and keep the time accurately, so that the house can be opened, and thoroughly ventilated later.

"Fused cyanide is white as snow, and resembles lump sugar. If swallowed, a piece the size of a pea's head would destroy life. Label 'poison,' and do not expose to air, as it absorbs moisture readily, and is ruined. Never fumigate a Peach-tree twice. Always empty the residue left in the jar in some protected place, or bury it.

"A perfectly gas-tight enclosure is necessary. Many nurserymen build their fumigation-houses in their packing-sheds, while others erect a simple and inexpensive house. First, a good strong frame is built, and covered outside with 1½ by 12 inch Virginia Pine boards and ½ by 4 inch battening. The interior, including the floor, should be lined with two-ply cyclone or heavy raw-hide building paper, over which a good quality of 4-inch flooring is laid. Any ordinary roof can be used."

Once again we must emphasise the extremely poisonous nature of the cyanide, and suggest that its use for garden purposes should only be entrusted to those whose intelligence and carefulness can be depended on.

NANCY.—The Central Horticultural Society of Nancy proposes to hold a great horticultural exhibition at Nancy from September 14 to in the

Parc de la Papinière, an excellent situation for the purpose. M. E. LEMOINE is the general secretary. The exhibition will not be confined to French growers only.

INFLUENCE OF DARKNESS ON THE COLOURING OF FLOWERS.—M. L. BEULAYGNE, in the *Comptes Rendus*, for March 18, treats of the influence of darkness on the development of flowers. He remarks that: "Several authorities have already studied this subject. SACHS showed, in 1863 and 1865, that a plant provided with reserves was able to flower in darkness, and so were other plants when a sufficient part of their organism remained exposed to light. He adds that, under these conditions, the colour of the flower is not modified by the darkness. According to the experiments of ASKENASY, in 1876, flowers which open in darkness are of a paler colour than those which develop in light, but exhibit the same form and dimensions. Then M. FLAHAULT, in 1878, confirmed the results obtained by SACHS, but thought that flowers

augmentation of the flower-peduncles developed in the dark may so influence this weight and volume as to render them greater than in normal flowers."

THE BEST EXHIBITIONS OF HORTICULTURE IN WALES are always those held by the Cardiff and County Horticultural Society, in the Sophia Gardens, Cardiff, a few minutes walk from the centre of the town and from the Castle. Mr. H. Gillett, 66, Woodville Road, Cardiff, has sent us a schedule of prizes to be offered at the next exhibition, which will take place on July 17 and 18, 1901. This schedule, which includes as many as 141 classes, is most comprehensive, and is arranged for a variety of plants, flowers, fruits, and vegetables, for which liberal money and other prizes are offered. Amateurs and gentlemen's gardeners will compete among themselves and each other, and there is a section reserved exclusively for cottagers. There is also an art section, and prizes are offered for the best paintings in oil or water colours of flowers, fruit, or plants, or fruit and flowers. These must



FIG. 132.—THE ELEPHANT EXHIBITED BY MESSRS. J. CARTER AND CO. AT THE TEMPLE SHOW.
(SEE P. 350)

developed in the dark were as intense in colouring as those that were in the light." M. BEULAYGNE decided to test the matter for himself, and to study also the comparative influence of light and darkness on the development, form, and structure of flower. He experimented on more than thirty plants belonging to very different families and in bloom, in Algiers, in December, January, and February. The experimenter gives the result of his trials at length, and deduces from them the following interesting results, that "1st. In darkness the flowers expand, usually, later than when in full light. 2nd. The colour of flowers kept in the dark generally shows a lessening in intensity that is quite slight in some flowers, rather marked in others, and in others again may amount to complete lack of colouring. 3rd. Flowers developed in the dark are generally less in size than those developed in light; but, on the other hand, the peduncles are sometimes more developed. 4th. The weight and volume of flowers expanded in darkness, including the peduncles supporting them, are always inferior in weight and volume to the same organs developed in the light, except that in rare instances the

be original work, and not copies from reproductions. There are three classes for photographs of horticultural subjects, for plants, flowers, or shrubs in pots or in the open; for arrangements of flowers or plants in vases, table decorations, button-holes, and cut flowers; and for fruit and vegetables.

TREES AND SHRUBS.

THE TWO EXOCHORDAS.

As both these hardy shrubs (*E. grandiflora* and *E. Alberti*) are now in full flower, a note upon the differences between them may be of interest to those who may perhaps not know the newer species. Even the old *E. grandiflora* is not so common in gardens as one would suppose, considering what a beautiful flowering shrub it is. This species makes a large spreading bush, generally seen at mature growth about 6 feet high, but under favourable conditions of soil and climate it reaches a height of 8 or 9 feet, and as much in diameter, with rounded outline of growth. The leaves are lanceolate oblong, pale green, and about 2 inches

long by half as broad, and serrated in the upper half. The flowers are in loose racemes, produced more or less erect on the terminal young shoots; they are pure white, over an inch across, with five broad, smooth-edged petals, and a greenish centre.

The new *E. Alberti* is so similar in growth and flower, that those not well acquainted with the older species would easily mistake one for the other. But there are differences by which one can readily distinguish them, apart from those of botanical interest. In *E. Alberti* the growth is denser, and the branches are decidedly more erect; the leaves are smaller, of the same form, though not quite so pointed, and without serration. The most apparent difference is in the flowers. These are smaller than those of *E. grandiflora*, and the raceme is more dense and erect. The flower is much the same in form, though smaller, and is of the same pure white, with the petals crimped at the edges. These characters are noted from the large established specimens at Kew, where there is an example of *E. Alberti* nearly 10 feet high. I am inclined to the opinion that *E. Alberti* is the strongest growing and hardiest of the two species, but a less graceful shrub. It was first heard of in 1883, having been discovered by Albert Regel in Turkestan, and sent to the St. Petersburg Botanic Garden, and named provisionally *Albertia simplicifolia*. It is obviously so nearly allied to *E. grandiflora*, that it may be but a geographical form of it. The *Exochorda grandiflora* was one of the discoveries of Robert Fortune in Northern China, and he sent it home to Standish and Noble under the name of *Amelanchier racemosa*, being misled probably by the resemblance to that genus. It was described by Lindley under its present name in the *Gardeners' Chronicle* in 1853, and was subsequently named by Hooker in the *Botanical Magazine* *Spiraea grandiflora*, and under this name it is commonly known. The third species, *E. serratifolia*, enumerated by Hemsley in his *Plants of China*, is not yet introduced, but it may we hope fall under the notice of the botanical collectors in that region. Both species are undoubtedly in the front rank of beautiful deciduous shrubs, and they will thrive anywhere in ordinary soil, but are finest in a light and warm soil. In cold clay soil *E. grandiflora* is liable to run too much to rank growth, and not flower profusely. In both there is a tendency to flower only at the topmost branches, but this can be regulated by judicious pruning. As wall shrubs they are excellent, and at Kew an old plant of *E. grandiflora* covers several square yards, and is now in full flower.

Since writing the above, Mr. George Paul has sent me, from his nursery at Cheshunt, a flower-branch of *E. Alberti*, which shows what a very beautiful shrub it is if grown in good soil. The specimen confirms what I have remarked about it in comparison with *E. grandiflora*, and I think that it is likely to supersede the latter, being more vigorous and floriferous, and probably of longer duration, as in some soils *E. grandiflora* is liable to die after a few years. *W. Goldring.*

DECIDUOUS FLOWERING SHRUBS IN SEASON.

Rhodotypus Kerrioides is a beautiful shrub of dense though slender growth, bearing on the end of a shoot of this season's growth, 4 or 5 inches long, a white flower, much resembling a single Rose, and the foliage is very like that of the common Hornbeam (*Carpinus*).

Corchorus japonicus foliis variegatis (Kerria) is a very interesting shrub, with its small yellow flowers and variegated foliage.

Spiraea media syn. *confusa* is a handsome, slender-growing shrub, height 4 to 5 feet, bearing snow-white rosettes of tiny flowers, which wreath every branch, and clothe them in some cases a length of 2 feet. As it is one of the first of this class to bloom, it is most useful and decorative when used for vases with some blooms of the beautiful stiff-growing Irises.

Halesia tetraptera is a very pretty shrub or tree, bearing a profusion of small white flowers, which resemble in their shape the Snowdrop.

Cerasus Padus (the native Bird Cherry), like most of its genus, is a most ornamental tree, bearing racemes of small flowers of a greenish-white hue. *W. H. Perkins, Blandford.*

NOTICES OF BOOKS.

THE PRINCIPLES OF VEGETABLE GARDENING.

By L. H. Bailey.

THIS is the twelfth publication of the Rural Science Series (Macmillan & Co., Ltd., London and New York). It consists of 458 pages, globe 8vo, and it is freely and well illustrated; the illustrations representing all kinds of tools necessary for the cultivation of home and market gardens, varying in extent from 1 to 100 acres, of the most modern and approved patterns, the implements represented being light, and strong withal. The information given is clear, and, on the whole, useful and interesting reading, not only for novices in the cultivation of vegetables, but for expert cultivators also. The information relating to gardening for profit in the neighbourhoods of large cities in the United States may, with slight modifications being made for difference in climate, be studied with advantage by readers of the *Gardeners' Chronicle* who contemplate going in for the business of market gardening. Pages 19 to 31, dealing in a most business-like and clear manner with the subjects of "Equipment and Capital," "Capital Itemised," and "Equipment Itemised," afford not only useful, but interesting reading to anyone about to invest his capital in the business of market gardening.

Chapter II. affords a good deal of useful information as to the forwarding of crops in cold frames and in hot-beds, and the way to make these old-fashioned but nevertheless indispensable garden adjuncts, as the end and aim of all glass, we are told at p. 44, "is to forward plants beyond their season." This result, the author says, is obtained by protecting the plants from unpropitious weather, or by actually forcing them. We should say the aim and end of glass is to obtain supplies of fruit and choice vegetables before they can be gathered out-of-doors, and by the same means prolong the supplies long after the plants out-of-doors ceased to yield produce.

Chapter III. (pages 80 to 106) is devoted to the Soil and its Treatment. "A good market-gardening soil is rightly defined to be one which is 'quick.' It warms up early in spring; it comes quickly into workable condition after rain; it is easy to keep in good tilth; it responds quickly to fertilising materials. Its physical condition is more important than its original richness in plant-food; the latter can be added. That is, in the determination of a soil for market-gardening purposes, two co-ordinate factors are to be considered—the texture or physical make-up, and the content of plant-food. Vegetable-gardening land (p. 83) should be rich; it should contain much plant-food material; and this material should be quickly available, for on its availability depends the earliness or 'quickness' of the land to a great extent. The plant should grow quickly and continuously. Slow-growing and intermittent-growing vegetables may not only fail to reach the market or the table at the desired time, but they are usually poor in quality. In order to secure this quick growth, the land should be very thoroughly prepared before the plants are put on it, and in most cases an application of concentrated fertiliser will help."

Under the side-heading of "Tillage" (p. 87), the author writes: "We till (1) to prepare the soil to receive the crop; and (2) to maintain the soil in good condition for the growth of the crop. To prepare the soil for the crop the land should be loosened and pulverised as deep as ordinary roots go. To maintain the soil in ideal condition the surface should be tilled or stirred as often as it becomes crusted or compacted. It is essential that every farmer and gardener should keep in mind the differences between preparation-tillage and maintenance-

tillage, for these ideas are associated with two classes of effort. Cultivating should be thought of as maintenance-tillage, not as preparation-tillage." The foregoing remarks are thoroughly sound and practical, and therefore should be acted on generally. Dealing with the subject of "Rotation" (p. 93), the author gives good practical advice in this direction: "Land which receives identical treatment year by year tends to deteriorate. A rotation is useful because (1) it gives different treatments to the land, the fault of one year tending to be corrected by the management in another year; (2) no one element of plant-food is exhausted, the rotation tending to even up the demands on the soil; (3) one crop leaves the land in good physical condition for another; (4) it incorporates humus; (5) it destroys pests and weeds; (6) it economises labour; (7) when green crops are turned under, available or digested plant-food is incorporated with the soil, and nitrogen might be supplied. The rotation of crops means also rotation in tillage, manuring, and other treatment, and one of these may be as important as the other."

In dealing with the Chicory plant (p. 363), we may remind the author that the best examples of forced Chicory is obtained by covering the plants with trough-like boxes in their summer quarters as soon as they have ripened the top-growth—say, early in November, covering the boxes with fermenting leaves to the thickness of about 2 feet, covering a certain percentage of the "crowns" at intervals of a fortnight or so. In conclusion, we may say that *The Principles of Vegetable Gardening* is well worthy of a place in the libraries of British gardeners. *H. W. W.*

LA VIGNE ET LE VIN.

UNDER this title M. Paul Jamaïn, with the assistance of MM. Georges Bellair and Claude Moreau, has published an elaborate treatise on the Vine and on Wine (Octave Doin, Paris). Devoted, of course, mainly to the interest of wine-growers in France, there is much which concerns the cultivator of Grapes under glass, as may be inferred from the full title, which runs as follows:—The Vine in the vineyards, gardens, and vineries; varieties, multiplication, grafting, planting, cultivation, pruning, climatal accidents, injuries, diseases, parasites, trellises, vineries, growth as espaliers, forcing, retarding, commercial cultivation, preservation of Grapes, packing, marketing. Another section of the work relates to the preparation and manufacture of wine, its distillation, and diseases—the vintage, Pasteurisation, wine manufacture in Algeria, classification of French and colonial wines. There are 357 figures in the text, and an atlas of coloured plates and maps of the several wine-growing districts of France in great detail. The earlier chapters are devoted to the Vine in the vineyard, its botanical conformation, and the enumeration of the varieties grown, according to the colour of the berries and the date of ripening, early, mid-season, or late. The number of varieties may be estimated by the fact that no fewer than 120 pages of descriptive matter are devoted to them. Most of the varieties concern the wine-grower only, and will not interest the British cultivator. The American varieties, so largely used as stocks, are also enumerated. The several wine-growing districts are enumerated, together with the particular varieties cultivated in each. Another section is devoted to the methods of propagation, the formation of a vineyard, the preparation of the soil, and pruning.

The chapters of most interest to our readers are those devoted to climatal injuries, accidents, and diseases, and these will be useful for reference, as they are well illustrated. The chapters relating to the manufacture of wine are very detailed, but of comparatively little importance to English cultivators; wine-drinkers will, however, find much to interest them. The atlas, with its maps and excellent coloured illustrations of diseases, is very serviceable. The work has been purchased for the Lindley Library.

THE FERNERY.

TRUNCATE FERNS.

THE occurrence of truncate leaves as a specific form is very rare, the most marked example being that of *Liriodendron tulipiferum* (the Tulip-tree), in which the leaves are squarely terminated, the midrib ending abruptly in the centre. In the Fern world, however, there are numerous instances of this in the varietal forms, and when we consider their circinate veneration, and that they are developed by constant accretions at the growing tips, it is extremely curious that in the varieties in question such growth should persistently and regularly prematurely cease, and be finished up by a thorn-like projection of the midrib beyond abnormally-squared and abruptly-terminated finials. The writer recently received from the United States, plants of *Phegopteris hexagonoptera* so characterised throughout, which had been found by Mr. W. R. Maxon, of the Smithsonian Institute, on the banks of the Potomac, some 8 miles from Washington. Here the broad Beech-Fern-like fronds have all the side-divisions, and the terminal ones square instead of tapering, and the midrib projects for half-an-inch or more as a translucent filament. *Lastrea montana* sports frequently, and generally in precisely the same fashion, that *L. m. truncata* is known among Fern-hunters as the "beginner's find," and in our own experience in districts where *L. montana* prevails, a day's hunting rarely fails to include *L. m. truncata* among the discoveries, no matter where we may be, some plants being thoroughly and some partly normal. The Hartstongue has yielded a great number of finds, which are called "perafrens," because, as a rule, there is a sort of pocket, either at the front or back of the frond, representing apparently an endeavour to continue the frond-growth despite the curtailed midrib, which projects as a thorn from the centre. The late Col. A. M. Jones, in one of his papers, reports this as the predominant form in a wood near Bristol, and there is no doubt that, despite the reduced crop of spores—such a form produces, those spores are peculiarly strengthened in some way, for "perafrens" comes more freely as strays than any other type we know of. *Lastrea filix mas* has yielded similar types, and also *Athyrium filix femina*, while curiously enough a crested form of *Polypodium vulgare* in our collection bears at the time of writing one frond which is truncate and thorned in all its pinnæ, but has the abrupt lobes slightly extended, forming bifid crests, and all the rest of the fronds are crested in the usual way, evidencing thus some sort of connection between truncation and crested. We have a Hartstongue, also with pockets and thorns to the two basal lobes of the fronds, showing that wherever a midrib tends to be formed the tendency to a premature stoppage exists. Mr. E. J. Lowe also crossed perafrens with a ramo-cristate form, the result being thorned pockets in profusion on much-branched fronds. In other cases in this same genus, the cornutum section, the fronde end roundly, with the midrib projecting, behind or before in different types, but never indiscriminately, as a thorn in the arc of the terminal semicircle, and in one case, named by me *radioecorum*, the sori radiate evenly round this semicircle, like the figures on a clock-face.

Curiously enough, despite the immense number of varietal forms of the Shield Ferns (*Polystichum*), we know of no case of a thoroughly-bred truncate form, i.e., with clearly projecting midribs at all terminals; but the fronds in some forms of *Asplenium Trichomanes* not infrequently end with a mere filament. The occurrence of this particular form of variation in such widely dissimilar species is extremely curious, especially as it cannot be attributed to stunting of growth by environment, since, with the exception of the Hartstongues, the wild varieties lose little of their stature, and are as robust as the normal.

It is, however, a curious fact that imitations of

L. m. truncata occur in the normal habitats very frequently, due to insect damage in the frond-coil prior to expansion, the result being optically identical, except that the thorn is always wanting, and a wound is visible under a lens. In Guernsey, too, I found a truncate Hartstongue in a lane where all fronds were periodically cut down by hedgers. The plant I found had several unpouched but apparently varietal truncate fronds, but under culture it became entirely normal. This suggested to me at the time the bare possibility of long-continued artificial truncation, whether by hedgers, or sheep, or insects, inducing variation to fit, which however is pure hypothesis, and only advanced as such. Chas. T. Druery, F.L.S., V.M.H.

SCOLOPENDRIUM KELWAYI

Is a hardy Fern which produces bulbils, which may be removed singly from the margins of the fronds. A small portion of the frond must be cut off with each bulbil. A sharp knife should be

by the numerous bulbils which are formed on the roots of *Platynerium aleicorne*; when fixed on a square of peat, the roots soon run through, and the small bulbils appear, and in a short time young plants are established. Other *Platyneriums* also produce bulbils, but not so freely. I have never found them on *P. grande*—this, however, may be raised from spores; it is necessary to be careful to collect the spores just at the right time, and they should be sown while quite fresh. The fact that this noble Fern is never very plentiful, proves that it requires some care to raise seedlings. I once raised quite a good batch, but lost a good many before they were well established. A. Hemslay.

NURSERY NOTES.

MESSRS. SANDER & CO., ST. ALBANS.

EVEN with the large extent of glasshouses which the almost annual extensions have provided, the

handled the tiny spherical bodies representing the earliest stages of the plant to the small store-pots prepared for them, where they forthwith make a new start; whereas if left for too long a time in the seed-pot, they invariably drop off one or two at a time, or in the event of fungus attacking them, the whole crop vanishes.

These houses contain thousands of hybrid *Cattleyas*, *Laelias*, *Laelio-Cattleyas*, &c.; each house containing plants which are in the same stage of growth, and here they remain until of flowering age. In the same block of houses the rare things in bloom intended for crossing, and the plants bearing seed-capsules, are found. We noticed in flower two fine examples of *Cypripedium bellatulum* album, a very handsome *Spathoglottis* × *aureo-Veillardii*, and a number of hybrid *Cypripediums*, named and unnamed, many of them having very distinct characteristics.

In the other houses were numbers of hybrid *Phaius* of every obtainable cross; a good batch of *Zygo-Colax* hybrids, a very large number of hybrid



FIG 133.—CEREUS AND MELON CACTUS EXHIBITED AT THE TEMPLE SHOW BY MESSRS. H. CANNELL AND SONS. (SEE P. 350)

used, and as little of the frond taken as possible. The pots should be surfaced with finely chopped sphagnum, sand, and a little peat may be added. If the bulbils are pressed lightly into this, and treated as young seedlings, they will soon start into growth. I have had them start as evenly as if they had been rooted seedlings, pricked off; but it requires care to prevent premature decay.

In the *Woodwardias* there occur two distinct forms of proliferation, *W. radicans* producing a single bulbil on the rachis near to the point of the frond; whilst *W. orientalis* produces a number of tiny bulbils on the surface of the pinnae, these making one tiny frondlet, and drop off easily if touched, but with *radicans* they are firmly fixed and are difficult to remove without damaging the fronds. In *Polystichum proliferum* the bulbils occur on the lower part of the rachis, and are numerous, while with *Gymnogramma* they occur at the point of the fronds or on the extremities of the side pinnae. And yet another curious form of proliferation is presented

encroachments made by the hybrid Orchids, now approaching the flowering stage by the thousand, has entailed the reconstruction and the addition of a large block of houses, and as fast as the new accommodation is ready, the space is filled by new plants and new and hybrid Orchids, for which special arrangements are made in the new houses. Even in this well-appointed establishment, where no expense is spared to cultivate successfully any desirable section of plants, time was when the raising of hybrid Orchids was a branch in which the results in some of the sections left much to be desired. Then came the provision of a block of houses in which to raise and nurse the seedlings, and after the subject and the methods were thoroughly understood, it became a tolerably exact art. At the present time it is found that hybrid Orchids properly cared for can be raised on any wholesome material not likely to favour the growth of fungus; though on whatever material the seedlings are raised, it is found to be of the highest importance to remove as soon as they can be

Dendrobiums now approaching the end of their show for the season.

In the houses of imported plants is a good show of *Cattleya Schroderae*, *C. Mendeli*, *Odontoglossum crispum*, *O. Hallii*, and other showy flowers of the season, the numerous plants of *Miltonia vexillaria* having commenced to expand their flowers. Among recent importations of choice plants were noted a vigorous lot of the true *Vanda insignis*, a good batch of *Renanthera lmschootiana*, and a fine lot of the pretty, small-growing *Sarcochilus Fitzgeraldii*.

In the new plant-houses, the Sanderian new strain of *Alocasia-leaved Caladiums* present new and useful subjects likely to afford good market plants; *Retinospora Sanderiana* is a singular variety with dense, round heads, with foliage of bluish tint; the hybrid *Anthuriums* are making a brilliant show with their hundreds of spathe, varying in colour from white to scarlet; and *Asparagus Sprengeri variegatus* is a handsome plant. J. O'B.

ALPINE AURICULAS AT SLOUGH.

It was in 1863 that the late Chas. Turner gained a Commendation for one of the first of his new alpine Auriculas—one named Supreme. He had been at work two or three years operating on the somewhat scanty material he then had to work upon. In the next year he secured a Second-class Certificate with Shakespeare, and in the following year he had First-class Certificates of Merit for John Leech and Meridian, and a Second-class Certificate for Titian. From that time the work of improvement has gone on: other raisers have been busy along the same line, notably Mr. James Douglas; but by far the largest roll of additions to the lists of named alpine Auriculas has come from Slough. The work is by no means finished there; at the present time there can be seen in fine bloom some named varieties not yet distributed because the increase is slow, and a large batch of unnamed seedlings is undergoing another season's test. Two or three white centres with a dark ground shading off to a delicate silvery-salmon and lavender, are full of promise.

Of the sorts which are in commerce, the following represent some of the finest of the gold-centred section: Charles Turner—not the variety we knew years ago under this name, but a greatly glorified one, having a deep rich crimson ground, with lighter shading, the pip large, without coarseness; Fred Knighton, a robust-growing variety, the dark ground shading to fiery-salmon, pip very stout and well formed—an excellent exhibition variety; Harry Turner, black ground, shading to salmon-crimson—a large, bold flower; Isabella, a very pleasing-shaded variety; John Beswick, named after a worthy florist at Middleton—a very fine dark-shaded flower; Magnet, deep crimson ground, shading to rosy-crimson, fine bold pip; Mrs. Ball, the centre pale lemon, with a rich crimson shading—extra fine; Roland, a distinct and attractive shaded variety; and Sunrise, dark ground, shaded with bright crimson—very striking when in its best character.

This list includes some of the leading gold-centred flowers raised at Slough. Two varieties raised by Mr. J. Douglas, which were much in evidence on the occasion of the recent exhibition of the National Auricula Society, are wonderfully fine; they are Dean Hole and Duke of York, both having rich gold centres, and shaded with fiery crimson. As shown in April last by Mr. J. W. Euston, it did seem as if in Duke of York the perfection of form in golden-centred Auriculas has been reached.

I think a decided lead in white centres has been taken by Mr. C. Turner, at Slough, as there are very fascinating varieties waiting for sufficient stock to distribute them. Of those with white and cream at present in the collection, and which can be had, are Charles Patey, dark ground shaded with plum, good pip and truss; Chastity, dark ground, shaded with violet—very fine quality; Countess, dark ground, shaded with lilac, very taking when well finished; Dandy, also an attractive shaded variety; Mrs. Harry Turner, black ground, shaded with violet—one of the best exhibition varieties; and Winifred, dark shaded violet—one of the best white-centred alpine sent out from Slough. We are by no means strong in white-centred alpine. We want white centres which will last, and not those, as some do, which appear to be dead while the segments of the corolla are still vital. I think, judging from my own experience, that the best white centres—the strongest and most lasting—will be had in association with rose and cherry shadings, as well as with deep mauve, violet, and purple.

The tendency to grow alpine very strongly may produce large pips and bold trusses, but too often at the cost of refinement. One could see at the last show what Lettuce-like plants were reared in small pots. Alpine do remarkably well in small pots. I think it is a mistake to grow them in large ones; but some fertiliser must be employed to produce such vigour in such small pots as was seen at the London show. When alpine are coarsely grown they are apt to become reflexed on the

corolla edges, which robs them of much of their beauty.

Nor are we entirely rid of the notched segment to the corolla. It was too much in evidence in the case of some of the alpine at the Drill Hall. Probably the defect arose to some extent from the measures which were adopted to hasten the expansion of the pips. But it did strike me that there is need for harking back to the refinement in the alpine Auriculas which is more characteristic of the northern-grown flowers. R. D.

IRELAND.

THE CULTIVATION OF OSIERS.

THE cultivation of the Willow in Ireland has never been prosecuted with sufficient energy, knowledge, and zeal, to enable the question to be answered satisfactorily, "Will it pay?" There is much land lying idle which presumably would be fit for the growth of Osiers, although the endeavour to cultivate it as arable land would be a risky venture.

Instead of importing so large a quantity of Osiers from abroad, we ought to be trying what we can do in raising our own; and among the several species of *Salix* fit for basket-work, *S. purpurea* is one that should be tried. It is said to be capable in moist land of yielding annually after the first few years 4 to 5 tons of rods, fitted for the finest kinds of basket-making. The plant is well fitted for forming fire breaks on heath land and plantations of timber trees, reaching a height of 25 feet in five years if left uncut, and equally adapted to form wind-breaks on exposed sites; it is invaluable also for the reclamation of land along watercourses. It is rich in salicin, a product which is coming largely into favour with the medical faculty, as a substitute to the well-known quinine. It is obtained from the peelings of the twigs when the latter are prepared for basket material.

Mr. Scaling, in his treatise on the Willow, urges the adoption of the Bitter Willow (also called the Rose Willow, or the Whipcord Willow), *Salix purpurea* (L.) for game-proof hedges, this species scarcely ever being touched by cattle, rabbits, and other herbivorous animals, by reason of its bitter flavour; it grows rapidly, and is well adapted for hedges. Cuttings may be planted at 6 inches apart, being pushed deeply into the ground. The annual value of shoots produced by a hedge is 4s. to 5s. a chain. To give additional strength, the shoots may be interwoven. In rich "bottoms" they will grow from 7 to 13 feet in a year. In England the supply of rods from this species of *Salix* has fallen very far short of the demand. The plant grows vigorously on light or warp land, but not on clay. It likes sandy loam, and will even do fairly well on gravelly soil, but it is not so easily reared as *Salix triandra*; *Salix rubra* (Hudson) is also admirably adapted for hedges.

The real Osier, *Salix viminalis* (L.) is termed the soft-wooded Willow, and is the best for rods, requiring to be two years of age, and is the variety most eligible for making hoops, but inferior to several other species for basket making.

Salix triandra is a valuable hard-wooded basket Willow, whose produce is available the third year after planting. An acre of plants will produce about 12 tons, worth about £3 per ton.

Salix fragilis, the Crack Willow, and *Salix alba* (the Huntingdon or silky Willow of Europe) are more important as timber trees, and for the production of shoots for hoop-making. Their rapidity of growth recommend these species for shelter-screens to plantations; and like most Willows they are not easily set alight. Mr. Scaling remarks in his *Manual*, "Osier plantations come into full bearing in the third year; they bear for ten years and then slowly decline. The unpeeled produce from an acre in a year averages 6 to 7½ tons, and the price ranges from £2 10s. to £3 10s. per ton." Although 7,000 acres are devoted in Britain to the culture of basket Willows (exclusive of spinneys

and plantations for the farmer's own use), yet in 1866 there were imported 4,400 tons of Osiers of the value of £44,000; and the value of the baskets imported in that year was of an equal sum. In recent years the importation into the United States of Willow material for baskets, chairs, &c., has, according to Simmonds, been valued as approaching £1,000,000 sterling. Land comparatively valueless for root or grain crops can be used very remuneratively for Osier plantations; the soft-wooded Willows like to grow in damper ground than the hard-wooded species; the best peeled Willow-branches fetch as much as £25 per ton.

Peeling is best effected by using steam, by the agency of which the material is also increased in durability. No basket Willows will thrive in stagnant water; Osier plantations in swampy land should therefore be drained. The cuttings are best taken from branches one or two years old, and should be planted 1 by 1½ ft. apart; no part of the cutting should remain uncovered, in order that a straight stem may be obtained the first year. Manuring and ploughing between the rows is thus also facilitated. According to the approved Belgian method, the shoots are cut close to the ground after the leaves have fallen. The accidental introduction of the destructive saw-flies (particularly *Hematus ventralis*), which prey also on Currant and Gooseberry bushes, should be guarded against. It may be stated that the Huntingdon Willow when grown as a timber-tree is of much value, the wood being soft, smooth, and tough. A. O'Neill.

SWEDISH POPLAR PLANTATIONS AND THE MATCH INDUSTRY.

THE best wood for use in match making is that produced by the Aspen (*Populus tremula*), on account of its softness. The great forests of these trees, that were once the source of the Swedish match industry, are now nearly exhausted. For many years Finland and Russia have provided us with the necessary material. However, the imports from these countries may be stopped at any time, on account of export being forbidden, and nothing is being done here in the way of replantation. The Swedish matches, which now are sent all over the world, will probably become scarce in the future if means are not taken in time to make up for the exhausted Aspen forests by making new plantations. As the Aspen, being somewhat difficult to propagate by cuttings, is not well suited for direct planting, trials have been made with other species of *Populus*. Cuttings of some Poplars root very freely, and grow rapidly. Experience has also shown that other Poplar wood is as useful for match making as is the Aspen.

The best varieties for cultivation are *P. balsamifera*, *nigra*, and *monilifera*. Good marshy ground, not loose, deep, muddy earth, either under cultivation or as a natural meadow, is very suitable for Poplar plantations, and seems to bring in a larger income than with anything else that could be thereon cultivated. Stiff clay is unfavourable to Poplars. Fields of poor quality, land that is stony or otherwise unsuitable for most crops, may be made profitable by planting Poplars.

The soil must be manured and ploughed in the autumn, and the plants set out in the following spring. In a natural meadow it is only necessary to make holes, and insert the plants in them.

The young plants, two-year-old cuttings, are set out in rows 2 feet apart, and alternating in the rows at the same distance. By planting thus, the young stems shoot straight up, and are long and free from branches. They are thinned three times: first, from eight to fifteen years after planting, when only those trees that are dwindling or ill-shaped, or have ceased to grow, are removed. If these amount to 240, there are 2,000 trees left, as an acre contains 2,240 trees. Towards the end of the time 500 more should be ready to be taken out. These are already saleable to wood-pulp makers, if

about 6 feet high and 3 feet across the top. The branches of these may be made useful for several purposes, as, for instance, for hedging or for firing.

The second thinning-out is performed from the fifteenth to the twentieth year. At the beginning of this period 500 trees are again taken down. These are suitable for match-making if 6 ft. high and about 10 inches across the top. When these have been cut down, there will be a rapid increase in the diameter of the remainder, which will soon average 11 inches across the top. The length of the wood used in the match-making industry should exceed 6 feet.

The last thinning-out takes place from the twentieth to the thirtieth year. There are then at least 1,000 trees left on a space of one acre. The former thinnings should have allowed for this. In the ten years the diameter of the centre should increase to over a foot, and the height to 9 feet. The cutting down of the trees may be extended over these thirty years. The remainder will, in this case, grow more rapidly, as they have more space for development.

Suitable soil is necessary for the plantation, as the better the soil the greater the returns. The expense of the first thinning is fully balanced by the value of the wood. As for the second and third thinnings, the cost of these is probably repaid by the great quantity of wood yielded by the tops. Partly some of this wood may be used for other matters than for firing. Horses and cattle eat the leaves willingly. Thus the abundant foliage at each period also contributes to the returns.

The income from such a plantation is as follows: The first thinning is not to be reckoned. The second period gives 500 trees at 1,010 crowns (£1 = 18 crowns). The last period yields 5,140 crowns. The summary thus will be 6,150 crowns, which amounts to 205 crowns per year and per acre. By certain deductions this total may sink to 175 crowns a year.

The expenses for carriage, &c., lessen, of course, the profits yet more, but in every case the final result seems to be so favourable, that it could not be got by seed or grass cultivation, especially on the marshy meadows most suitable for Poplars. The ground, once planted, ought not to be restocked with new plants after the final thinning. The old roots give out a great quantity of shoots, which very soon fill the ground, and the thinning may again be performed at the proper time.

But even the best-managed Poplar plantations cannot fully supply the needs of the Swedish match industry. We must take greater care of the valuable Aspen tree than we now do. *W. E. D., Sweden.*

AN OCEAN CENTRE FOR PHOSPHATE OF LIME.

THERE shoots up from the Pacific Ocean, in 10° S. latitude, and 105° E. longitude, the curiously formed Christmas Island. There was nobody "at home" at the time of the annexation to the British Empire in 1888, only clouds of pigeons answered to the call of the new comers; nor was there any trace of human habitation on that lonely spot. Now there are over 700 souls living and moving at the bidding of commercial enterprise; a medical man, two engineers, three women, managers, and some 700 Chinese coolies, who are employed in the getting and loading into ships of various nationalities the fossilised bird-dung with which the soil is covered. The island, by the way, is 12 miles from east to west, and 10 miles from north to south. Its sides, nearly all round, are precipitous, and about 40 feet from sea-level. The loading of the phosphate is carried out at one small cove. The island is densely wooded, the top soil resting on several inches of what is phosphate of lime. This is being carefully and rapidly removed, and there are other seams to follow when this is exhausted. The highest point in Christmas Island is about 1,200 feet above sea-level, and the inequalities of the surface render the collection rather difficult. It would seem as if the island had originally been the resort

of myriads of birds, who found food sufficient to keep them there for a long period of time; that then decayed vegetation and dead birds, formed a layer of rich soil over the manure, and so on, layer upon layer, until the present time—the vegetation holding its own well, and keeping all the covered treasure in proper condition for the needs of the agriculturist and horticulturist when he chanced to come that way. Our Vice-Consul at Hakodate, Japan, states that some 12,000 tons of the fossil had entered there in the six months ending February last, much of it being broken down by the use of sulphuric acid, and hence called superphosphate of lime. What the total quantity of phosphate on the island may be has not been estimated.

HOME CORRESPONDENCE.

THE BOLTING OF CABBAGES.—We always thought that bolting was mainly due to sowing at too early a date, and not to any harmful climatic influences. The dates of sowing for obtaining an early summer crop of Cabbages differ about three weeks, gardeners in Scotland and the north of England sowing about the beginning of the last week in July, and those in the south from August 14 to 21. These dates hold fairly good for sowing the older-known varieties. The question arises—Do we know enough about the peculiarities of the newer varieties of Cabbages, so as to be enabled to sow at a date that will, under ordinary conditions of weather, assure us against the danger of bolting? Herein lies a little bit of work for our County Council experimental stations, north and south, for which gardeners everywhere in these islands will be duly thankful. *Expert.*

THE PARENTAGE OF LADY DOWNES AND FOSTER'S SEEDLING GRAPES.—The history of these two Grapes, as given on p. 334 of the *Gardeners' Chronicle*, is very different from that given in Barron's *Vines and Vine Culture* (see pp. 156 and 166, 3rd edition). From the former it might be thought that they were the result of a chance sowing of seed, whereas the latter states that they were the offspring of Black Morocco, crossed with the Sweetwater by Mr. Foster, gr. at Benningborough Hall, York; as those who have the book may read for themselves. *C. H. Howes, Headfort, Kells, Meath Co.* [See also *Gardeners' Chronicle*, 1858, p. 70. *Ed.*]

THE WAR AGAINST THE SPARROWS.—Writing in the *Gardeners' Chronicle* of May 10, Mr. Harrison Weir makes an unreasonable attack upon the humanitarians for defending the sparrow. Abuse is not argument, and, though it may cloud the issue, it leaves us precisely where we were so far as the right and wrong of the matter is concerned. Those "nondescript individuals," the humanitarians, will doubtless survive any abuse which Mr. Weir may deem fit to throw at them, but as to the facts—are they all on Mr. Weir's side? If that is so, then the opinions of such experienced men as Mr. Joseph Nunn, the well known Royston farmer, and Mr. Joseph Wither- spoon of Chester-le-Street, one of the greatest fruit-growers in the north of England, are not worth the paper they are written on. Again, many of our ablest naturalists are in favour of the sparrow, as instance the testimony of the Rev. F. O. Morris, Prof. Dallas, and Dr. Green, F.Z.S. Does the evidence of these authorities count for nothing? They do not plead for the sparrow on humanitarian grounds, but on those of utility and expediency, and I think what they say will outweigh anything that Mr. Weir and his friends may be able to produce against the sparrow. As to sparrow-clubs, the following confession made before the 1873 Select Committee on Wild Birds Protection is worth consideration:—"I had a sparrow-club once. I thought they were very injurious birds. We killed them till scarcely one could be found on the premises. After the sparrows became almost extinct, we found blight of various kinds very much increase upon us, and it has done so ever since. I am glad to say sparrows are becoming more common with us now; this year our trees are comparatively free from blight. Meyers, market-gardener, par. 329." The humanitarian objection to wholesale destruction is, I am glad to see, supported by the Rev. Canon Tristram, F.R.S.

He says: "Nothing can excuse the idiotic sparrow-clubs for their wholesale destruction;" in which most sensible persons will agree. *Joseph Collinson, 53, Chancery Lane, W.C.*

THE RECENT TEMPLE SHOW.—When a huge exhibition, such as is the Temple Flower Show, is compelled to find space to break out into a big area in the open, it is but natural to wonder where the expansion will end. Evidently with all the great tent space provided, not nearly enough is at disposal, and the show bids fair soon to out-grow all the available room of the Temple Gardens. Two unfortunate things result from the present restricted show area, large as it really is. First, the exhibits are far too crowded, hence monotony, sameness, formality that is almost surfeiting; and second, the distressing crowding of visitors which leads to exceeding discomfort, and excessive heat in the tents, so that thousands of those who came to see the show could see very little because of the crowding, and owing to the heat and discomfort, were only too glad to get outside on the lawn. That is not exactly the object of holding a great flower show. Almost worse than either of these things was the cloud of dust raised during the afternoon of the first day in the three long tents over the broad gravel walk, and which literally smothered flowers, fruits, and vegetables alike. Beautiful fruit was literally spoiled and rendered unfit for use by reason of the coat of dust by which it became covered. Prior to the opening of the second day, the gravel had been well watered; still, the mischief had been done. I have never seen such a dust-coating on exhibits at any previous show. Either laying down a floor of boards throughout the long tents, or else thoroughly saturating the gravel floor with water whilst the judging is in progress, can and should be a remedy. From a spectacular point of view, it must be admitted that the Temple Show is not an unqualified success, and practically, so long as the exhibits have to be staged under existing conditions, it can never be otherwise. It was so easy to see that there was enough material in the late show to fill a covered space of fully three times the area of the tents, and in that way not only to give to each group or collection individuality, but also to enable it to be arranged with ample artistic skill. Further, so much space would enable the visitors to disperse themselves far more freely, to enable all to see in comfort, and lead to picturesque and effective arrangement. But so much the Temple Gardens cannot supply. Only a very large area could do that. It was very noticeable that whilst the first day seemed to resolve itself into a great fashionable or society function, the people who love flowers, and wanted to see or order, were more in evidence on the second day. No doubt it is the first day crowd which fills the Society's coffers, but it is the visitors on the other days who really go to see the show, and they, after all, are the Society's best supporters. The flower show tent which can be freely ventilated evidently has yet to be made. The heat on the 22nd was unbearable. *A Fellow.*

FRUIT AT THE TEMPLE SHOW.—The representative collection of fruit staged by Mr. Fyfe, gr. to Lord Wantage, Lockinge Park, last week, was deserving the very highest praise, not only for the fine quality of the exhibits, but for the artistic and original manner in which the fruit was displayed. The addition of graceful foliage, and panicles of Currant-fruited Tomatos, as displayed on this occasion, added to the attractiveness of a collection of fruit, no matter how well it may otherwise be staged. Mr. Fyfe's Madresfield Court Grapes were superbly finished, and his white varieties were by far the best seen at the Temple. His dishes of Royal Sovereign Strawberry were also very fine. It was the opinion of many gardeners present that an even higher award was deserved. In Mr. McIndoe's collection the most noticeable fruits was a stand of Black Hamburg Grapes, perfect in bunch and colour, and his three dishes of Cherries were excellent. *H.*

TRADING AT THE TEMPLE SHOW.—A good gardener friend declines to visit the Temple Flower Show on the ground that it is a purely trade display. I fear were the trade element absent there would be very little of the Show left. I do not complain of that trade feature in the least, or of the trading that is done at the Temple, so long as it is limited to the taking of orders in an unostentatious way, and without any evidence of

canvassing. That is perfectly a legitimate action, but I was somewhat amused, though barely pleased to observe in one case a trade exhibitor busily engaged at his table in filling seed packets from paper bags, evidently expecting to do good business in that way. With so much of effort on the part of the council to repress glaring trade-cards, I could but think this action, on the part of the exhibitor, was rather too bold. Happily this was the only case. D.

PRIMULA SIEBOLDI.—This fine hardy *Primula* has been used with excellent effect in Regent's Park, where literally hundreds of plants, evidently turned out of pots in the early spring, bloomed all through May in rich profusion. Exposure to ample light and air not only causes the handsome foliage to be more compact and stouter than is seen in house-grown plants, but the flower-stems are stouter, and the numerous trusses of bloom so much richer in colour. Really we have few spring blooming plants which furnish that very deep red hue so effectively as this hardy *Primula* does. It has been too much the case to grow it for house decoration, its admirable out-door properties being too much ignored. The variety *Primula laciniosa* also makes fine out-door clumps. X.

SHADING FOR ORCHID HOUSES.—I have used the blinds named by your contributor "A. W.," in one of the first seed-nurseries in Erfurt, and appreciate their great usefulness as well as easy application; and I believe that they would cover their extra cost in the amount of labour saved, as they can be unrolled and rolled up very quickly if used as a roller blind but with two cords passed under and over the blind and working through a small pulley. These blinds are made of $\frac{1}{4}$ -inch laths, and are made about the same distance apart. The new ones are rather heavy, but when one year old they become very light; they also keep out a considerable amount of frost. *Thos. Burney, Stanwick, Carlisle.*

GREENHOUSE HEATING.—With dear coal and coke, this is a serious matter to growers of plants for market, and I write this letter in the hope that some of your correspondents can suggest some improved method of heating. I am informed that in the U.S.A., and in Belgium, greenhouses are sometimes heated by steam, and it seems to me that if it can be properly controlled, we can economise in this way. However, the general idea is that steam cannot be properly controlled, that a uniform temperature cannot be maintained. I have spoken to one large grower near London who has tried it, but did not succeed; however, I am inclined to make a trial after getting all the information I can, and I trust through your valuable journal to get some hints that will secure success. I have just returned from visiting a friend in the North of France, who owns greenhouses covering 10,000 sq. metres. I may mention he knows nothing of gardening, but inherited the place, and has fitted it up with two steam boilers and $1\frac{1}{2}$ and 2-inch steam-pipes throughout. He keeps a very low pressure, but still the appearance of the plants suggests failure, and to my mind, the reason is perfectly clear, the air is too dry. The houses are 200 feet long by 18 feet wide, with a centre table; the frame-work is composed entirely of T-iron, to support square tiles 12 by 12, and this is covered with ashes; the steam-pipes are under each of these tables, and all underneath is open. The result of the heating as evidenced by the state of the plants spells failure; but I told my friend the system might be made to work well enough if he passed his pipes through a shallow concrete trough, or even a wooden conduit, and for the side tables he would require to close them up, as is usually done with propagating-beds, allowing the heat to come through 18 inches of ashes, turf, sand, and Coconut-fibre, to plunge the pots in. I trust the foregoing will draw out some correspondent who can give points to your *Constant Reader*.

NEW INVENTIONS.

A NEW METHOD OF CLEANING ROADS AND WALKS.

WE note in a foreign contemporary a figure and description of a machine for the destruction of weeds on roads and walks which is quite new, in that the direct heat of burning fuel brought to bear on the surface of the walk suffices to char or kill

all weeds, grasses, fallen seeds, &c., on the space of half a square yard whenever it is allowed to stand still for a few seconds. If the machine will do all that the inventor claims for it, the laborious and expensive work of hoeing and breaking up the surface of roads, drives, and paths in parks and gardens will be a thing of the past, and the arsenicated weed-killers, and hot-water and agricultural salt-dressings will no longer be required in places of great extent.

The machine consists mainly of an enclosed fire-box for holding coke in a state of combustion, and a drum containing a fanner for creating a draught, and getting up strong combustion in the fuel. The fire is lit from the top, as in an Arnott stove, burning downwards; and the box being fitted with portable fire-bars at the top and bottom, it needs only to be drawn out on to the ground, and to be again filled with coke and inverted; the layer of red-hot coke remaining being then on the top, combustion goes on as before.

The makers are MM. Bertram & Dietrichs, at Neustadt, near Pinne, Posen, Germany.

SOCIETIES.

WOOD GREEN AND DISTRICT HORTICULTURAL.

MAY 14.—This Society held a very successful meeting at the Masonic Hall, Wood Green, on the above date, when Mr. R. Core, a gardener, and a F.R.H.S., gave an interesting lecture on the zonal Pelargonium. The usual monthly show was a success, the prize given by Mr. Amos Perry, jun., of the Hardy Plant Farm, Winchmore Hill, being keenly contested; the winner being Mr. W. E. PHILLIPS, who showed a capital group of *Caladiums*. Mr. E. J. WICKENDEN staged a nice group of Orchids and Ferns, in which some plants of *Cypripedium* insignis were especially noticeable. Mr. AMOS PERRY staged a fine collection of new species of Iris.

WARGRAVE GARDENERS.

MAY 15.—A lecture was given to the members of the Wargrave Gardeners Mutual Improvement Association on the above date by Mr. W. Iggulden, F.R.H.S., on "Grape Culture." Being a market grower himself, the lecturer contrasted the methods of the "trade" and those of private growers, and thoroughly convinced his audience that there was no need to make such a stir about Grape-growing as some gardeners did. In a most amusing way, Mr. Iggulden spoke of the kind of houses best suited to the purpose: span-roofed ones being preferred, inside and outside borders, and method of forcing them, mixed vineries, planting the Vines, affording water, the colouring of the fruit, ventilation of the vinery, pruning the Vines, Vitis pests and means of eradicating them; and exhibited photographs in order to show how his idea had been carried out. A profitable discussion afterwards took place, in which Messrs. Stanton, Powell, Hatch, Scott, and others, joined. The lecturer answered a number of questions put by various members; and a hearty vote of thanks was accorded him. There were some good exhibits. *H. Coleby, Hon. Sec.*

VARIORUM.

THE CHARACTER OF SOUTH AFRICAN COUNTRY.—We are indebted to the *Australasian Pastoralists' Review* for the following extracts from a private letter written by Mr. A. Ramage, a Victorian, serving with Kitchener's Horse. They indicate impressions formed in course of the campaign, and what our Australian cousins think of South Africa as met with:—"Pastoral and agricultural matters being more in your line, I shall endeavour to confine myself to these, and the following will give you a fair idea of the character of the country and its possibilities. Bloemfontein is a town about the size of Ararat, and for dust and wind I am inclined to think can hold its own against any other part of the world. The wind begins to rise about 7 A.M., and blows continuously till about 9 P.M., always bringing with it clouds of dust. Possibly the frequency of these dust-storms is more ascribable to the dryness of the season than to the natural condition of the country, as this district seems to be particularly unfortunate in that respect, no beneficial rains having fallen

since February last. Speaking generally, from either a pastoral or agricultural point, the Bloemfontein district is the worst I have met with, either in the Orange River Colony or Transvaal; and I have had good opportunities of seeing both, for after the battle of Diamond Hill we (Kitchener's Horse) followed the marvellous De Wet nearly all over the above-mentioned colonies, and as my duties were principally confined to scouting, I had the advantage of seeing much more of the country than otherwise would have fallen to my lot. What strikes an Australian most is the almost total absence of timber; this feature is most marked, and seems to be the chief characteristic of the country. The hills and mountains are bald, and some extremely rough and rocky. The country, both in the Orange River Colony and Transvaal, varies very much in character, and consists of some of the finest pastoral and agricultural country you would wish to see, also some of the roughest and most useless. The good country principally consists of open plains with broken and undulating country intervening. The grasses seem of a good and fattening description, and for the most part there is no scarcity of it. Even the hills are fairly well grassed. The water supply is fairly plentiful throughout, and even in the parts where there is a shortage of surface waters, an abundant supply can be obtained by sinking almost anywhere at a very shallow depth. The soil, like the country, varies, but on the good lands it principally consists of red, black, chocolate and sandy loam, of great depth in most places. To even give a rough estimate of the area of good country would be a difficult matter, but from my limited experience I think I am safe in saying the land fit for occupation is almost unlimited, and in the near future, under proper management, will develop into a very valuable country. The sheep the Boers breed are the worst type of that animal I ever saw—in fact, are more nearly allied to the goat than sheep. The cattle, in comparison, show more quality, but even they are rough, and require heavy culling and the introduction of fresh blood before anything like creditable herds can be produced. The country north-west of Pretoria, and between that place and Mafeking, is very pretty, being fairly timbered and having a good backbone in the Rustenburg Range. Somewhat beautiful country is in the valley of the Crocodile river, and in the valleys around the pretty little township of Rustenburg where Oranges, Lemons and Citruses are grown in great abundance and perfection, and I can tell you the troops enjoyed them when on the march. Out by the Drakensberg Mountains the country is very good, but not so well watered as that around Rustenburg, and is very sparsely timbered. The climate, generally speaking, is mild, dry, and for the most part exceedingly healthy. If the days are sometimes pretty hot, the nights are delightfully cool and clear, so that one can always get a good sleep. The foregoing should give you some idea of the country, its possibilities and conditions."

FOREIGN CORRESPONDENCE.

CACTUS CINERARIAS.

IN the *Gardeners' Chronicle* for May 11, p. 300, there appeared an illustration of *Cactus Cinerarias* of Messrs. H. Cannell & Sons. Last year my firm offered a new form of *Cineraria*, and I now enclose some flowers of that strain; but I feel obliged to say that these are almost the last flowers on the plants, therefore much smaller than they should be. We have been gathering seeds of these for the past ten days. I am sorry that I cannot include some distinct colours that I noticed in my strain, including shades of rose, salmon, coppery-rose, &c. *Frederick Roemer, Quedlinburg, Germany, May 25.*

[The flowers are of considerable size, and exhibit similar characteristics to that with rolled florets above referred to, but the strain would not appear to have been quite so fixed by selection as that of Messrs. Cannell's. ED.]

MARKETS.

COVENT GARDEN, MAY 30.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantums, p. doz. 5 0-7 0	Ferns, small, per 100 4 0-6 0
Arbor-vita, var. doz. 6 0-8 0	Ficus elastica, each 1 6-7 6
Aspidistras, p. doz. 18 0-36 0	Foliage plants, var., each 1 0-5 0
— specimen, each 5 0-10 6	Lily of Valley, each 1 9-8 0
Cannas, per dozen 18 0—	Lycopodiums, per dozen 3 0-4 0
Crotons, per doz. 18 0-30 0	Marguerites, per dozen 8 0-12 0
Cyclamen, per doz. 8 0-10 0	Myrtles, per dozen 6 0-9 0
Dracenas, var., per dozen 12 0-30 0	Palms, various, ea. 1 0-15 0
— viridis, per doz. 9 0-18 0	— specimens, each 21 0-63 0
Ericas, var., per doz. 12 0-8 0	Pelargoniums, scarlet, per dozen 0-12 0
Eranthis, various, per dozen 6 0-18 0	— ivyleaf, per doz. 8 0-10 0
Evergreens, var., per dozen 4 0-18 0	Spiraeas, per dozen 6 0-12 0
Ferns, in variety, per dozen 4 0-18 0	

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Asparagus "Fern," bunch 1 0-2 0	Lily of Valley, per doz. bunches 6 0-12 0
Carnations, per doz. blooms 1 6-2 6	Maidenhair Fern, per doz. bunches 4 0-8 0
Cattleyas, per dozen 9 0-12 0	Mignonette, per doz. bunches 4 0-6 0
Cherries, per dozen 2 0-3 0	Odontoglossums, per dozen 2 6-6 0
Gardenias, per doz. 1 0-2 0	Roses, Tea, white, per dozen 1 0-8 0
Lilium Harrisii, per dozen blooms 2 0-4 0	— Catherine Merm., per dozen 3 0-6 0
Lilium lancifolium album, per dozen blooms 1 6-3 0	Smilax, per bunch 3 0-5 0
Lilium rubrum, doz. 8 0-5 0	Tuberose, per doz. blooms 0 4-0 6
Lilium longiflorum, per dozen 2 0-4 0	

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, Australian, (South), Victoria, and Tasmanian, case 10 0-13 0	Grapes, New Hampshire, per lb. 1 9-3 0
Apricots, per box 1 0—	— Belgian, black, per lb. 1 0-2 0
Bananas, bunch 6 0-11 0	Lemons, case 9 0-10 0
— loose, per doz. 1 0-1 6	Lyches, new, pkt. 0 10—
Cherries, per box 1 3-1 6	Melons, each 1 3-2 6
— per sieve 7 0-10 0	Nectarines, per doz. 8 0-12 0
Cobnuts, lb. 0 5—	Oranges, Navel, 80 14 0—
Figs, per dozen 2 0-6 0	— Murcia, case 18 0-35 0
Gooseberries, per sieve 3 0-4 0	— Denia 16 0-35 0
Grapes, Muscats, home-grown, per lb. 2 0-5 0	Peaches, dozen 4 0-12 0
	Pines, each 2 6-5 0
	Sapucaia nuts, lb. 1 0—
	Strawberries, A., lb. 1 6-2 0
	— B., per lb. 0 8-1 3

VEGETABLES.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Artichokes, Globe, per doz. 3 0—	Onions, picklers, per sieve 3 0-5 0
Asparagus, home-grown, bundle 0 9-4 0	— Egyptian, bags 4 6-5 0
— Giant, bundle 4 0-6 0	— new, bunches, per doz. 1 0-2 0
— various, from 0 6—	Parsley, 12 bunches per sieve 0 6-9 0
Beans, Chnll. Islds. and home, dwf., new, per lb. 0 8-0 9	Peas, frame, per lb. 0 4-0 6
— French, dwf., packets 0 6—	— Flats 2 6-2 6
— Broad, in flats 2 6—	— English, bushel 10 0-11 0
Beetroot, bushel 1 0-2 0	— sieve 5 0-5 6
Beet, per dozen 0 6—	Potatoes, per ton 70 0-135 0
Cabbage, tally 2 0-4 0	— New, per cwt. 12 0-14 0
— dozen 0 6-1 0	— Malta, per cwt. 10 0—
Carrots, 12 bunches 1 6-2 0	— New Frame, Channel Islds., per lb. 0 4 0-5
— washed, in cwt. 2 6—	— Lisbon, per box 3 9-4 0
— new, bunch 0 6—	— Channel Islds., per cwt. 18 0—
Cauliflowers, p. doz. 1 0-1 6	Radishes, per 12 bunches 0 6-1 6
— crate 5 0-7 0	Rhubarb, Out of doors, per dozen bunches 1 0-2 0
— tally 4 0-7 0	Salad, small, punnets, per dozen 1 3—
Cress, per dozen punnets 1 6—	Shallots, per doz. bundles 2 0—
Cucumbers, doz. 2 0-3 6	Spinach, English, bushel 1 0-2 0
Endive, new French, per dozen 2 0—	Tomatoes, Canary deeps 5 0—
Garlic, lb. 0 2—	— English, new, per 12 lb. 7 6-9 0
Horseradish, English, loose, per dozen 1 0—	— Channel Islds., per lb. 0 7-0 9
— foreign, p. bunch 0 9-1 0	Turnips, per dozen 1 4-2 0
Leeks, doz. bunches 0 9-1 0	— new, bunch 0 9-0 10
Lettuces, Cabbage, per dozen 0 6-1 0	Watercress, p. doz. bunches 0 6-0 8
— Cos, per doz. 2 6-4 0	
Mint, natural, per dozen bunches 1 0-1 6	
Mushrooms, house, per lb. 0 6-0 10	

REMARKS.—English Peas are now arriving in bushels and sieves, the sieve holds half a bushel, and is in general use for Gooseberries, Cherries, Currants, Plums, &c. Indian Mangos fetch per doz., 10s. to 12s.; Vegetable-Marrows fetch 10s. each;

Kent Broccoli will soon be over for the year; the Channel Islands Potatoes come mostly from Jersey; some Pines are arriving in barrels holding forty-eight fruits, 2's, the variety being Ripley Castle, and they come from the island of Antigua.

POTATOES.—Various sorts 70s. to 90s. per ton; foreign, in bags, 50 kilo, 2s. to 4s.; Dunbars, per ton, 130s. to 135s.; Lishous, per box, 4s. John Butts, 32 & 34, Wellington Street, Covent Garden.

SEEDS.

LONDON: May 29.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., state that there was but little business doing on today's seed market, and quite a holiday spirit prevailed. The prolonged drought naturally hinders all field operations, and consequently retail sowing orders are few and small. Meantime, stocks generally are moderate, and values unaltered. Kerr's Tares have become scarce, but a few Brunswick Gore's are still obtainable. Full prices are asked for Mustard and Rape-seed. There is no change this week in Bird-seeds. Blue Peas and Haricot Beans realise former terms.

FRUIT AND VEGETABLES.

GLASGOW: May 29.—The following are the averages of the prices recorded since our last report:—Asparagus, 1s. 6d. to 4s. per lb.; Cucumbers, 2d. to 6d. each; Cherries, 5d. to 8d. per lb.; Apricots, 1s. per dozen; Gooseberries, 2d. to 4d. per lb.; Mushrooms, 1s. to 1s. 6d. do.; Potatoes, 1s. to 1s. 2d. per peck; do., new, 1½d. to 5d. per lb.; Onions, foreign, 4s. to 4s. 6d. per cwt.; Parsley, 6d. to 8d. per dozen bunches; Lettuces, 6d. to 1s. 6d. per dozen; Cauliflowers, 8d. to 2s. per dozen; Cabbages, 6d. to 10d. per dozen bunches.

LIVERPOOL: May 29.—Wholesale Vegetable Market.—Potatoes, per cwt.: Bruce, 3s. 9d. to 4s. 3d.; Up-to-Date, 3s. 8d. to 4s. 2d.; Main Crop, 3s. 10d. to 4s. 6d.; Turnips, 6d. to 10d. per dozen bunches; Onions, foreign, 4s. to 4s. 6d. do.; Parsley, 6d. to 9d. per dozen bunches; Lettuces, 6d. to 10d. per lb.; Cucumbers, 1s. 6d. to 3s. per dozen; Cauliflowers, 8d. to 2s. per dozen; Cabbages, 6d. to 1s. 4d. per dozen. St. John's Potatoes, 1s. to 1s. 2d. per peck; do., new, 2d. to 4d. per lb.; Grapes, English, 2s. 6d. to 3s. per lb.; Pines, English, 6s. each; Gooseberries, 6d. per lb.; Pears, 6d. to 1s. 6d. per lb.; Cherries, 6d. do.; Cob-nuts, 8d. per lb.; Apricots, 1s. to 1s. 6d. per dozen; Asparagus, 1s. 6d. to 2s. 6d. per bundle; Cucumbers, 4d. each; Mushrooms, 1s. 4d. per lb. Birkenhead Potatoes, 1s. to 1s. 2d. per peck; new, 1½d. to 5d. per lb.; Peas, 6d. do.; Asparagus, 1s. 6d. to 4s. per 100; Cucumbers, 2d. to 6d. each; Cherries, 8d. per lb.; Apricots, 1s. per dozen; Gooseberries, 2d. to 4d. per lb.; Mushrooms, 1s. to 1s. 6d. do.

CORN.

AVERAGE PRICES of British Corn (per imperial qr.), for the week ending May 25, and for the corresponding period of 1900, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1900.	1901.	Difference.
Wheat	25 5	27 7	+ 2 2
Barley	23 11	24 1	+ 0 2
Oats	18 2	19 8	+ 1 6

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period May 19 to May 25, 1901. Height above sea-level 24 feet.

1901.	MAY 19 TO MAY 25.	DIRECTION OF WIND.	TEMPERATURE OF THE AIR.				TEMPERATURE OF THE SOIL AT 9 A.M.		
			At 9 A.M.				RAINFALL.	At 1-foot deep.	At 2-feet deep.
			Dry Bulb.	Wet Bulb.	Highest.	Lowest.			
SUN. 19	E.S.E.		deg. deg. deg. deg.	ins. deg. deg. deg. deg.					
MON. 20	E.N.E.		59.4 53.5 59.0 41.8	...	54.5 53.0 51.0 35.0				
TUES. 21	E.N.E.		54.5 59.0 63.2 45.0	...	55.5 53.6 51.0 35.6				
WED. 22	E.N.E.		61.2 52.7 66.9 45.3	...	55.9 54.0 51.2 34.5				
THU. 23	E.		61.2 52.0 66.0 44.8	...	56.3 54.2 51.4 33.9				
FRI. 24	E.		62.7 53.0 70.2 46.1	...	56.8 54.5 51.6 37.1				
SAT. 25	E.N.E.		62.4 54.8 68.2 46.3	...	57.5 54.8 51.8 34.0				
MEANS..			59.6 52.2 66.7 44.7		56.0 53.9 51.2 35.0				

REMARKS.—A week of bright sunny weather, with cold drying winds. No rain has fallen since the 9th inst.

GENERAL OBSERVATIONS.

The following summary record of the weather throughout the British Islands, for the week ending May 25, is furnished from the Meteorological Office:—

"The weather continued extremely fine and bright throughout the kingdom until Saturday, when it became less settled generally, and slight rain was experienced at several north-eastern and eastern stations.

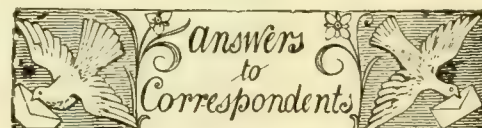
"The temperature was above the mean, the excess ranging from 1° in England E. and N.E., 2 in the Midland Counties, to 4° over Ireland and England. S.W., and 5 in Scotland, N. The highest of the maxima were recorded on rather irregular dates, and ranged from 75° in Scotland, N., 76° in Ireland, N., and 75° in Ireland, S. and England, S.W., to 69° in England, N.E. and the Channel Islands. The lowest of the minima, which were mostly registered during the earlier half of the week, varied from 32° in England, N.E., and 33° in Scotland, E. and England, N.W., to 38° in England, S.W., 40 in Ireland, S., and 41° in the Channel Islands. The diurnal range was again large at all inland stations.

"The rainfall.—The weather was again rainless over the country as a whole, the only exception being the eastern and north-eastern parts of Great Britain at the close of the week.

"The bright sunshine continued unusually prevalent, the percentage of the possible duration ranging from 85 in the Channel Islands, 81 in England, S.W., and 80 in England, E., to 66 in Ireland, N., 57 in Scotland, E., and 55 in England, N.E. The highest percentage at any individual stations were 89 at Jersey and Torquay, 88 at Falmouth, and 87 at Guernsey and Hollesley Bay.

THE WEATHER IN WEST HERTS.

The present type of weather has now prevailed for more than a fortnight. Its chief characteristics have been warm days and cold nights, the absence of rain, persistent sunshine, and a singularly dry atmosphere. During that period there has occurred only one cool day and but one warm night. Consequently the daily range in temperature has been unusually large, the average difference between the lowest and highest readings in the thermometer—screen amounting to 25°. Although the nights have been cold, yet at no time has the exposed thermometer shown more than 3° of frost, and no injury has been done to vegetation. The ground temperatures, doubtless owing to the cold nights, are not as high as might have been expected, being only about 2° warmer than is seasonable, both at 1 foot and 2 feet deep. No rain has fallen for nearly three weeks, and no measurable quantity of rain-water has come through the bare soil percolation gauge for more than a week; so that the ground is now, owing to the dry air and constant sunshine, becoming very dry. During the period in question the sun shone on an average for ten hours a day, or about four hours a day longer than the mean for the month. Calms and light airs from the north-east prevailed until the 26th, but since then the direction has been west and north-west. The atmosphere has been throughout exceptionally dry. The first Rose to flower in the open ground in my garden was the Scotch Burnet Rose, which was in bloom on the 28th, or a week earlier than last year, and five days earlier than in 1899. E. M., Berkhamsted, May 28, 1901.



APPLE: Oxtou. The flowers on the midsummer shoots occasionally come in this way. You will have observed how like they are to a Rose-blossom. The true fruit is not formed in such cases. See fig. 134, p. 359.

A CERTIFICATED ODONTOGLOSSUM AT THE TEMPLE SHOW: F. W. T. You expect too much from us. It should suffice for exhibitors in general if certificated plants are described briefly in the Award List appended to the report of the Orchid Committee.

BOOKS: F. M. The copy of Miller's Gardening Dictionary might be worth 15s. to £1, if in good condition.

CHRYSANTHEMUM: G. H. The leaves are badly attacked by a mite—Phytotus. The only thing to do is to pick off and burn the injured leaves. Plants that are attacked should be isolated, or the disease will spread.

CYCAS REVOLUTA THAT HAS LOST ITS LEAVES: F. W. B. The plant may make no more growth for a year or longer, and may then throw out fresh leaves if the trunk be healthy. Keep it in an uniform condition as regards moisture, rather inclining to the dry side.

DOUBLE SPATHED RICHARDIA: Mr. Brotherston sends us from Selaby, Darlington, a *Richardia* with a double spathe, which is a sufficiently common occurrence; but in this case there is an added peculiarity in the shape of the spadix, which branches near the base, the new branch being directed downwards in the form of a hook. What is the origin, and what may be the significance of this malformation, we are at loss to say.

GINKGO BILOBA, MAIDENHAIR TREE: *R. H. P.* There are very few trees of Ginkgo in this country higher than your specimen (65 feet). In our issue for December 23, 1899, the heights of a number of large trees of this Conifer are given, together with a figure of the tree at Panshanger.

GRAPES: *W. S.* The berries are affected with "spot." Try dusting them with sulphur.

HARDY SHRUBS, &c.: *Scotch Forester.* Try *A. D. Webster's Hardy Ornamental Trees and Shrubs* (Gardening World Office).

INSECT ON ROOTS OF DENDROBIUM: *A. Worsley.* The broken remains of the Myriopod are apparently those of an exotic species of *Polysphum*. Possibly it is the species which occurs sometimes in vast numbers in warm houses. It feeds almost exclusively upon the green confervæ which grows upon the walls of such places, and although a very undesirable inhabitant, it does not appear destructive to cultivated plants. Spray the damp parts of the walls of your house with Paris Green, more especially those parts covered with the green confervæ. You might also try two parts oatmeal to one part Paris Green, mixed dry, and place as baits in their haunts.

INSECTS ON GRAPE-VINES: *Cultivator.* The grub you have sent us from the Vines is the larva of a species of Tortrix Moth. We publish in the present issue (see p. 342), an account, with illustrations, of a similar, if not identical, species, and we should be glad if you would consult the article for further particulars. Meanwhile you should have the grubs and chrysalides (pupæ) removed by hand at once. In winter strip your Vines, and paint with Gishurst Compound-soap, or other insecticide.

MANURE FOR POTATOS: *G. G. C.* Nitrate of soda and superphosphate of lime at the rate of 1½ cwt. per acre, two applications three weeks apart.

MUSHROOMS WHILST QUITE SMALL DRYING UP: *Alex.* The young Mushrooms have died from either lack of nitrogen in the manure, due to a too lengthy exposure before it was made up into the bed, or from dryness of the soil, rendered the greater by the growth of an enormous number of Mushrooms. We fear you can do nothing to restore the productiveness of the bed. Straw is not a good material wherewith to cover a Mushroom-bed. The lighter portions of stable-litter, sweet hay or bast mats are better. Water should not be applied directly to the bed, but to the covering materials, and if this be applied betimes the bed will not dry out, and will not need water to be afforded in quantity. There should be no necessity to wet the covering materials daily. A bed should not have a temperature of 80° when spawned, but that of blood-heat, 96°. No artificial heat is needed in a Mushroom-house at this season, when the difficulty is how to keep it below 60°.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*G. T. M.* *Akebia quinata*.—*R. K.* 1, *Odontoglossum crispum*, a pretty form; 2, good, ordinary; 3, a very handsome variety of the *O. crispum* roseum class; 4 and 5, ordinary rose-tinted; 6, 7, and 8, very good forms; 9, pretty spotted variety; 3 and 9 are the best; they are valuable varieties.—*J. B., Chippenham.* *Odontoglossum* × *Andersonianum*, a very handsome and richly spotted form.—*R. F., Plymouth.* *Dendrobium Dalhousieanum*.—*J. B.* *Odontoglossum crispum* of good quality.—*R. E., Bristol.* The flower seems to be of an imperfectly developed *Lælia purpurata*; but there is in the form of the lip a suggestion that it might be a hybrid between *L. purpurata* and *L. Perrini*. The po

are absent, so we cannot test whether it is a *Lælio-Cattleya*, as you suggest, or not, but the appearance of the flower is that of a pure *Lælia*.—*J. T., Dartford.* 1, *Odontoglossum cirrosum*; 2, *Lycaste cruenta*; 3, *Spirea media*; 4, *Cytisus filipes*; 5, *Aerides japonicum*.—*W. S.* 1, *Piptanthus nepalensis* (evergreen Laburnum); 2, *Clianthus puniceus*; 3, *Glechoma hederacea* variegata (variegated Ground Ivy).—*Horsheath.* *Abutilon vitifolium*.—*G. F.* *Ionopsidium acaule*.—*S. P.* 1, *Saxifraga hypnoides*; 2, *Ajuga reptans* variegata; 3, *Pulmonaria officinalis*; 4, *Lonicera tatarica*; 5, *Berberis vulgaris* variety; 6, *Syringa chinensis*.—*C. M.* *Nandina domestica*.—*Constant Reader.* *Ceanothus azureus*.—*H. A.* The Morel, *Morchella esculenta*.—*W. B.* *Sherardia arvensis*.—*J. T. S.* *Lonicera caprifolium*.—*Beginner.* *Cerastium tomentosum*. Send a leaf or two of the Tomato.

PEACH-LEAVES: *G. B.* Your leaves are affected with the shot-hole fungus. Try dusting with flowers-of-sulphur.

PLUM BRANCHES: *T. S.* The branches are affected with a red *Acarus*. Try spraying with petroleum emulsion.



FIG. 134.—A DOUBLE APPLE BLOSSOM. (SEE P. 359.)

PEAR LEAVES: *T. F.* They are affected with a mite. Burn all the leaves you can.

POLYANTHUS FAILING TO GROW: *A. Goodwin.* The crowns were infested with eelworms, and these may account for the browning of the tips of the leaves. It is an improper practice to lift and divide these plants annually, especially to divide them. The plants do best when left undisturbed for several years, and as they have the habit of raising themselves higher out of the soil yearly, the ground about them should be top-dressed with loam and leaf-soil in the early spring, bringing the top-dressing close up to the base of the leaves. The plant likes sunshine and plenty of water whilst making growth, and the seed-vessels should be removed directly after flowering. A north border was not a good place for them after they were taken from the beds in late spring, and it would have been better had they been put in a sunny spot and shaded with evergreen twigs till established.

PRIMULA STELLATA: *C. B.* The spike you mention is that of an Orobanche, or Broom-rape, which grows parasitically on the roots of the Primula. The seeds of the Broom-rape were probably in the peat used for the potting compost.

RED-FLOWERED CHESTNUT APPARENTLY DYING: *F. A. C.* Nothing but a full investigation would disclose the cause or causes for the bad health of the tree. It may be due to something deleterious in the soil or subsoil which has caused loss of roots, to a waterlogged or to a very dry soil, &c. You might take out a trench all round the tree at a distance of 5 feet from the stem, and work inwards till you come to the roots, and

ascertain their condition and that of the soil. A starved tree may be brought round, but an unhealthy one seldom.

SPAR FOR PATHS: *Constant Reader.* If you will send your name and address, we will give you the names of a few dealers.

ST. DUTHUS PEA: *Eighty-one.* We are unable to find the name of the raiser. It was shown by a Mr. Holmes at a meeting of the Royal Horticultural Society in 1887, when a F.C.C. was awarded it. The variety is one of the best dry-weather Peas.

THE LENGTH OF THE GARDENERS' DAY IN LONDON: *Hampstead.* The usual hours during the summer half-year are from 6 A.M. to 6 P.M., and extra pay for overtime in the case of garden labourers, but not in that of young gardeners; though why this should be we are unable to understand, excepting on the ground that the labourer is liable to dismissal without notice, which the other is not. Some employers and head-gardeners deviate from the 6 to 6 rule to the extent that you name. During the winter half-year labour begins at dawn and lasts till sunset, but there is no reduction of wages. The thinning of Grapes, affording water to lawns, trees, and

shrubs in the evening during hot weather, is remunerated in the case of young gardeners, with either payment in money, kind, or the grant of a holiday now and then, or some little indulgence.

TOMATO PLANTS WITH CONSTRICTED STEMS AT THE GROUND LEVEL: *Codicote.* When planting them set them an inch or two deeper than they have stood in the pots. The plants are quite healthy and very vigorous. We do not remember to have observed stems with such a deep purplish tinge as those have that you sent.

TOMATOS: *S. & L.* The plants are affected by a fungus which causes the so-called sleepy disease. There is no cure, but the admixture of lime with the soil is recommended as a palliative. We should burn the plants, and start afresh with new soil.

VINE-LEAVES BROWNEED: *J. R. W.* The cause is doubtless insufficient ventilation, probably from 7 to 10 A.M. There is no disease, and no trace of fungus.

VIOLETS AND RED-SPIDER: *G. G. C.* The plants may be kept fairly free of this *Acarus* by maintaining the soil in a generally moist condition, and by syringing the under-sides of the leaves with an elbowed nozzle on the instrument, the workman going along one side of the rows one day, and the other side the next day. This work should be done late in the day.

COMMUNICATIONS RECEIVED.—*S. A.*—*W. J. B.*—*Prof. G. Henslow*—*S. W. F.*—*A. K. A.*—*R. D.*—*Dr. Bonavia*—*J. Smith*—*A. C. F.*—*J. S.*—*J. O'B.*—*D. R.*—*W. Hawker*.—*Sec.*—*Yorkshire Gala*—*Cultivator*—*Columbian*—*W. C.*—*Bath*—*G. H.*—*G. F. H.*—*C. S. & Co.*—*R. Farley.*



A VIEW OF THE RIVER FAL FROM THE GARDENS AT TRELISSICK, CORNWALL. PHOTOGRAPHED BY S. WYNDHAM FITZHERBERT, ESQ.



THE

Gardeners' Chronicle

No. 754.—SATURDAY, JUNE 8, 1901.

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NOTES FROM THE CAUCASUS.

CLIMATE—RAINFALL—SUBTROPICAL DISTRICTS—VEGETATION.

THE greater part of the vast Empire of Russia is situated in the most northerly parts of Europe and Asia, and is subject to long and very cold winters, and (so far as that part is concerned which forms the middle or west of Europe) to a summer with, on an average, a slight rainfall compared, for instance, with that of England, and with plenty of scorching sun and strong, dry, dusty winds. Yet the empire includes in its vast southern parts in the Caucasus a district with a warm, moist, sub-tropical climate, with a vegetation so vigorous, robust, rapid, and healthy, as is not to be found in many other parts of Europe. A very warm summer, with plenty of rain and moisture in the atmosphere, is followed by a winter when the temperature seldom sinks below freezing point.

THE CLIMATE OF COLCHIS.

Those who have lived in these parts for many years and noticed the temperature, say that, as a rule, only every twelfth or thirteenth year do they get a very cool summer, as they call it,

when the temperature now and then, for a couple of hours in the morning before sun-rise, sinks to three or four degrees below freezing. In such winters snow falls, but this does not lie long, as the sun soon melts it, and the cooler season in any year does not last longer than a couple of months.

From the observations I made during my journeys in the Caucasus, and from information given by those who have lately made excursions in this part of Europe, I will, in a few words, describe the climate, vegetation, and horticultural work, especially in that part of the Caucasus called Kolchis, and in the neighbourhood of the Black Sea.

West of the Himalaya mountains there are no countries where subtropical gardens like those of the Orient could very well be made on a large scale. Certainly there are, in the south of Europe, districts with a moist, subtropical climate, although these places, for the most part, are influenced by surrounding countries with climates that are either cooler or drier.

Of such subtropical districts, the most important are those on the Asiatic frontier, in Transcaucasia, or rather, in that part of it which lies in the neighbourhood of the Black Sea, as central Transcaucasia, on the contrary, has a pretty dry and continental climate. Tiflis with 22° Réaumur of frost and 472 mm. rain, is of course far from being the type of a moist subtropical country. But the nearer the south-west corner of the Caspian Sea is approached, or the Black Sea, the less is the frost, and the more plentiful the rain. Yet in the east, on the shore of the Caspian Sea, where for instance the town of Lencara lies, the quantity of rain is not anything like what would be called subtropical; 976 mm. rain is even too little for the Tea-plant with its small requirements. The frosts are here sometimes so severe, that the bays, made by the Caspian Sea, are covered with ice, and the hot summer is nearly rainless during the months which are most important for the vegetation. Still drier is the country on the more northern part of the Caspian Sea-coast, where it sometimes has the appearance of a desert.

The regions in the neighbourhood of the Black Sea, again, especially in the south, may without doubt be counted as typical subtropical land. They form, as one may say, quite a world in themselves in the great Russian Empire, and have quite a distinct character. Sheltered by the high mountains, which serve as an immense wall and screen against the cold north winds, and which at the same time shut in the humidity which continually rises from the Black Sea, we get here the conditions which result in a moist warm climate. The north part of the shore is cooler. From Naworassisk, 45° north latitude, down to Tuapse, about 46° north latitude, where the mountains are not so high, and where in winter the north wind blows, the climate is still more like that of the Crimea. In Naworassisk scarcely 848 mm. rain falls; in Tuapse again, as much as 1756 mm. Frosts here prevent all thought of subtropical vegetation. But the higher the chain of mountains rises, the greater is the quantity of rain, and the higher the temperature in winter. In Satschy, 2062 mm. rain falls. The mean temperature in winter varies between + 12° and 15° R. Frosts below 13° have not been hitherto noticed. I met with persons who had lived for years in these parts, and who told me that they seldom knew the thermometer show so many degrees of frost. To prove it I was shown very old and magnificent Washingtonia

robusta, Phoenix, Cocos, and other Palms planted out in the open ground, and growing well with a slight cover in winter. The Colchis territory begins here; this somewhat reminds us of the sea-coast of west and south-west Europe by the Atlantic Ocean, and somewhat suggests the subtropical forests of the east; and the further to the south the more is the vegetation like that of the Orient. Notwithstanding the somewhat lesser quantity of rain (1285 mm.), the climate in Suchum is still warmer; the yearly temperature varies between 27° and 15°, and the absolute minimum, only once in fifteen years, reached 7°.

THE RION RIVER DISTRICT.

That which has been previously said gives us an idea about the temperature and climate on the north-east shore of the Black Sea, reckoning from Naworassisk to Suchum; but south from Suchum is the larger Rion-river district, which on the north is bounded by the Dadianowa Mountains, on the east by the Grusian-Tmerelk Mountains, and extending along the Black Sea down to the Turkish frontier. The wide valleys between the mountains in this tract, and even the lower slopes of the mountains themselves, have a really subtropical climate. Kutais, which the map will show to be quite inland, and a long way from the Black Sea, has a mean temperature of, in winter, + 5, and 22 in summer. The minimum is —6, although so low a temperature has seldom been noted, and many years may pass before it again occurs. The rainfall is 2398 mm. In Poti the winter is still milder, + 5, and in Batum, which lies close by the sea, the winter minimum is seldom lower than —5; the rainfall is 2295 mm. There are many sheltered places in the neighbourhood of Batum where the temperature never falls below freezing-point, especially such nooks or valleys as are protected against cold blasts from the mountains; consequently this tract is, especially in its warmest south-east parts, quite a distinct country, with a moist, sub-tropical climate, and, as regards Batum and its surroundings, stands thus midway between the moist, sub-tropical and the temperate climate.

The winds in these parts of the Caucasus are of great importance. They often cause rains which last for weeks; heavy, thick clouds cover the sky, gather in thick masses round the mountains, and give a dark, mournful look to the surroundings of Batum, making the day dull, and even hiding the smaller hills. Nowhere in Russia do the clouds hang so low as here; it looks as if you could take hold of them with your hands. From these clouds rain almost continually streams down, sometimes as if it were poured out of a water-can, leaving off for short intervals, to presently start again with masses of water. In Batum four times as much rain falls as in St. Petersburg, although as a fact the climate of St. Petersburg is rather moist, so the reader may easily imagine what kind of downpour Batum receives.

It must not be thought that it is always raining. The rainy season changes to hot weather, and then everything is altered. The previously dull Batum, with its surroundings, shows itself in its full beauty, and can compare with any of the lovely places round the Mediterranean Sea. Especially beautiful is the landscape when seen from above, from any of the hills; the foot of some of the slopes is thickly overgrown with young dark green forests of Chestnut-trees (*Castanea vesca*), some cultivated, and some hills are covered with pale

green Maize fields. Other places from a distance look like enormous brown heaps of bricks, on account of the red clay (laterite), which here sometimes forms for several feet deep the top

say which is more beautiful—the long chain of the Caucasus mountains fronting the sea in the north-east, or those at a distance, the glittering snow-covered mountains of Asia minor, which

Not less charming is the country further away from the shore. No one who has been in Kritais, for instance, and ascended the high slope by the road to the Mozamet monastery,



FIG. 135.—LEAVES OF PLANES: A, *PLATANUS ACERIFOLIA*; B, *P. ORIENTALIS*; C, *P. CUNEATA*. (SEE P. 363.)

layer of the soil. In the numerous broad and deep valleys round about are lively, bright little brooks, rushing through sapphire-green fields. On another side lies the foaming pale-green sea; that on the horizon is finely bordered by lofty snowy mountains. It is difficult to

form a magnificent part of the landscape when looking to the south. Where could a combination like this be found of snow-white mountains, blue sea, and hilly, woody landscape? A little more cultivation, and this land may be counted as one of the finest in the world.

could surely forget the magnificent landscape he saw. The not very high mountains are divided by rivers, and the monastery stands on a hill-top; there is flourishing country round the foot of the mountain, and in the background of the large valley all is as in a frame, or as if

seen between gigantic curtains. The Caucasus shows its woody mountains that rise higher and higher, with snowy ridges sparkling in the sun. In the distance are snow-capped mountains, and the wildest scenery; below, in the moist and hot atmosphere, a subtropical flora, with Pomegranates, Oranges, Fig-trees, Roses, and vineyards, charming cultivated hills, pushing their heads up in the blue atmosphere, through the

The great humidity of the air, something like that of a hothouse, is very noticeable in Colchis. This has an enervating and weakening influence, and occasionally causes fever, especially in low situations, where the ground is very moist. The best remedy for this is to seek out places higher up on the mountains about 2000 feet above the level of the sea. No doubt the wide, sheltered

PRUNUS PSEUDO-CERASUS.

THERE are in gardens many varieties of this Japanese Cherry, all beautiful, but perhaps the variety known as J. H. Veitch is the best of them, its rose-coloured flowers being very attractive. It comes into bloom about a fortnight later than Waterer's Cherry. Our illustration (fig. 136) is taken from a tree of an allied variety growing at Worthing, and although illustrations of such trees are rarely satisfactory, it is at least sufficient to show how free-flowering the variety is. For the photograph whence our illustration was taken we are indebted to Dr. Bonavia.

THE PLANES.

FOR a genus of trees so familiar to all by name and appearance as the Planes, it is curious that so much misapprehension should exist as regards the limitation of their species. The genus includes undoubtedly the most useful and important of town and street trees, and as enquiries have been addressed to Kew recently by municipal authorities and others in respect to them, it seems worth while to briefly review the genus, in the hope that it may help to some extent to clear up the confusion that exists as to the identity of the different species.

The Planes (*Platanus*) form collectively a very distinct and well-marked ("homomorphous") genus; but the same individuality does not extend to the component species. This applies especially to the Old World, or *orientalis*, section. They run so much one into the other, that it is often not easy to say to which species a given specimen belongs. That, however, does not affect the question materially, once the leading types are distinguished. A colour may be anything between red and blue, or a mixture of these—crimson, purple, or violet—but that does not prevent us from distinguishing a red thing or a blue thing when we see it. The case, however, is different when red things are habitually called blue; and that is what (metaphorically) happens very frequently among the Planes.

There are about half-a-dozen or eight species of *Platanus* known, the following of which are in cultivation:—

- | | |
|---------------------------|-----------------------------|
| EUROPE AND ASIA. | AMERICA. |
| 1. <i>P. orientalis</i> . | 4. <i>P. occidentalis</i> . |
| 2. <i>P. acerifolia</i> . | |
| 3. <i>P. cuneata</i> . | |

The leading characters of the genus are the large, alternate, lobed or palmate leaves, the scaling bark, the aggregation of the flowers and fruits into globular heads, one or more of which are borne on thin pendulous stalks. The trees are amongst the very largest that are to be found in the deciduous vegetation of northern cool temperate regions.

The Planes appear to be easily suited as regards soil. A rich loam and abundant moisture probably suits them best. There is a very fine specimen of *P. acerifolia* at Kew, growing in rather clayey soil, but there are also large trees growing in the poor sandy soil that extends over so much of the gardens.

P. ORIENTALIS (TRUE ORIENTAL PLANE).

(See fig. 135, B, p. 362.)

This picturesque and interesting tree has been grown in Britain for three and a half centuries. It may be taken as the type of all the Old World Planes—some authorities, indeed, reduce them all to forms of this species. There is a fine specimen at Kew, between the Wood Museum and the Palace, which may fairly be considered as typical. In this the leaves are deeply lobed, the lobes being more numerous compared with *P. acerifolia*, and the primary ones extending more than half-way to the base of the leaf. The heads of fruit are more numerous on the pendent stalks, and are set closer together. The tree itself is different in habit, the trunk divides at a few feet from the ground, and the bark is not so smooth and scaly as in *P. acerifolia*. Altogether there is no difficulty in distinguishing between typical trees of each species. As a tree for the garden



FIG. 136 —PRUNUS PSEUDO-CERASUS VAR.

white clouds which rise to and pass over their slopes.

In other parts of Europe palaces and villas would be erected, and long ago hotels would have been built on such a spot; but here the people have not yet learnt to value the beauty of their scenery, and these charming places are either uninhabited, or there are only small cottages, in which the inhabitants, harassed by daily toil and poverty, seldom find time to admire the paradise wherein they live.

valleys with their moist temperature, where the thermometer in winter never falls below freezing, will sooner or later be discovered by agriculturists. Nurserymen, gardeners, and amateurs will be able to grow here in the open air the Tree-Fern of the Himalayas, valuable varieties of Eucalyptus, and many other useful and rare plants and trees from the southern hemisphere, and from Chili and New Zealand. A. K. Andersson, St. Albans.

(To be continued.)

P. orientalis is the more suitable, on account of its closer, compact, and more branching habit. In the winter season, especially, it compares favourably with the gaunt trunk and lank, open, branches of the "London" Plane. It has been cultivated in Britain since the middle of the 16th century, and is said by Duhamel to have been introduced by Lord Bacon. According to Turner, the author of the *Herbal*, it must have been in cultivation previous to Bacon's time, for he says he had seen young trees in England, and his *Herbal* was published between 1541 and 1568. As has been the case with numerous other plants of Mediterranean origin, the date of its introduction is not really known. It may easily have been introduced by sailors or others on board merchant vessels trading to the Levant. Its wide-spreading branches and shade and shelter-giving qualities make it one of the most prized of all trees in hot oriental lands; and this, together with the great size and age to which it attains, have naturally made it the subject of many romantic legends. Nowhere, apparently, do more magnificently-developed specimens exist than in Turkey. On the shores of the Bosphorus there are trees said to be 1500 years old.

P. ACERIFOLIA (THE "LONDON" PLANE).

(See fig. 135, A, p. 362.)

From the true Oriental Plane, which is by no means so common a tree, *P. acerifolia* is easily distinguished, first by its larger, broader, and much less deeply lobed leaves; and second, by its straighter, taller, smoother trunk. In stature, too, it is loftier, and the habit is more pyramidal than that of the spreading, flat-topped *P. orientalis*. It is the most popular of all street trees, and thrives in the London atmosphere better, perhaps, than any other tree. Probably nine out of every ten Plane-trees in this country belong to this species. It is a native of the Levant, and is probably somewhat harder than *P. orientalis*. It is a tree that loves good soil and plenty of moisture, under which conditions it makes rapid growth. For planting in streets, promenades, and similar places it is not only especially well suited because of its robust constitution, but also because its large broad leaves provide a dense shade in summer; whilst in winter, when every ray of sunshine is welcome, its open habit allows more light to come through than does that of most other trees similarly employed—like Elms or Limes. The trees cultivated as *P. integrifolia*, *palmata*, *pyramidalis*, and *macrophylla* belong to this species, differing only in minor characters such as the degree of pubescence on the leaves, their size, or the erectness of habit. Perhaps the most distinct of them is *pyramidalis*.

Var. Süttneri.—In July, 1897, the Floral Committee awarded Messrs. Russell, of Richmond, a First-class Certificate for this plant. It was, however, exhibited as "*P. occidentalis*" *argenteo-variegata*. It is one of the handsomest of variegated hardy trees, the leaves being conspicuously marked with creamy-white blotches on a green ground. Sometimes they are almost entirely white, but become green as they get older. Although identical with the *var. Süttneri* known for a good many years previously, Messrs. Russell's specimens were raised in their own nursery.

P. CUNEATA. (See fig. 135, c, p. 362.)

Belonging to the Oriental group of Planes, this species, whilst being very distinct from *P. acerifolia*, runs very close in some of its forms to *P. orientalis*, although in its typical form it is distinct enough. The leaves are smaller than those of *P. orientalis* and *P. acerifolia*, but it is the shape that best distinguishes them. In *P. acerifolia*, the base of the leaf is usually cordate; in *P. orientalis* it is usually truncate; but in *P. cuneata*, the blade gradually tapers to the petiole, forming the narrow, wedge-shaped base to which the specific name refers. In *P. orientalis*, too, the primary lobes of the leaf are five in number, but in *P. cuneata*, the cutting away of the base mostly reduces them to three; these lobes are sometimes

very deep. This species is probably the least hardy of these Oriental Planes. It reaches as far to the east as North India, and has been known as *P. nepalensis*. These North Indian forms are very subject to spring frost; and at Kew, specimens a dozen or more years old are still mere scrubby shrubs, contrasting very unfavourably with the clean, rapid growth of *P. acerifolia* and *P. orientalis*.

P. OCCIDENTALIS (WESTERN OR AMERICAN PLANE).

If one picks up almost any nurseryman's catalogue, "*Platanus occidentalis*" will be found offered for sale by the dozen or hundred. Yet it is safe to say that not one dealer in twenty would be able to supply a single plant of the true Western Plane. A good many have probably never even seen one. Personally, I only know of two specimens that are undoubtedly true; these are small trees obtained a few years ago for Kew, from the United States. All the big trees so-called that I have seen are one or other of the Oriental Planes—almost invariably *P. acerifolia*. So far as foliage is concerned, there appears to be no reliable character to distinguish these two species. Both have broad, three or five-lobed leaves, the lobes angular and remotely toothed. The ball-like fruit-heads, however, furnish characters which are sufficient to distinguish them. In all the Oriental Planes the number of fruit-heads on each peduncle varies from one to six—generally, however, it is more than one. In *P. occidentalis*, on the other hand, it is very rarely indeed that more than a single head of fruit is borne on a stalk. I see in the *Silva of North America*, Professor Sargent figures a branch of *P. occidentalis* with two balls of fruit, but he mentions that this is unusual. In *P. occidentalis*, too, the old stigmas still adhering to each fruit (and there are, of course, scores of fruits in each "ball,") are much shorter than in the Old World species, and the "ball" is consequently much smoother than the rather bur-like ones of *P. acerifolia*. Another difference of less account may be observed by breaking up the balls and comparing the fruit itself. In both species this is somewhat wedge-shaped, but in *P. occidentalis* the apex is flat or only slightly rounded, whereas in any of the Oriental group it is always more or less conical and tapering. On the whole the number of balls of fruit is the best character for ordinary purposes, and anyone whose specimens of so-called "*P. occidentalis*" are in autumn and winter sprinkled over with strings of two to six fruit-heads, may safely conclude that they are of Old World and not of American origin. By referring to the leaf characters here described under the three Oriental species, the proper name may be ascertained, although, as previously intimated, there are intermediate forms whose reference to one or other of the species must remain a matter for individual judgment.

There seems to be no reason why the American Plane should not thrive in Britain, and in spite of its undoubted rarity, there may be odd specimens scattered about the country. But young imported plants, although they grow well for a season or two, almost invariably succumb to fungoid attacks. In the South United States, especially in the regions of the Ohio and Mississippi Rivers, it attains to heights of 140 feet to 170 feet, and has a trunk 10 feet or more in diameter. According to Sargent, it is "the most massive, if not the tallest deciduous-leaved tree of the North American forests." It is widely spread, and reaches as far north as the northern shores of Lake Ontario, and westward to Kansas and Texas. The wood is valued for many purposes, but more especially for making boxes for Tobacco. *W. J. Bean*.

[The history of the Planes has been given in more or less detail in our volumes for 1841, 1842, 1860, 1862, and 1869. In inspecting, several years ago, the seedlings in the nurseries of Thomas Rivers, of Sawbridgeworth, and of Messrs. Lee, at Isleworth, we were much impressed with the varying degrees of hardiness among seedlings from the same batch of seed. Ed.]

STRAWBERRIES IN COLD FRAMES.

THOSE who can grow forced plants in frames will find them very acceptable in June. I am writing of cold frames for Strawberries, as fire-heat is not needed; indeed, the plants are better for its absence, and cold frames which have been occupied by vegetables or half-hardy plants will suit the Strawberry plants better than shelves in dry houses. The difficulty Strawberry forcers have to contend with are greater in June than earlier in the year, as the pots dry out so quickly, and when a plant gets dry, the flavour is quickly impaired, and the plants soon become infested with red-spider. There is nothing new in cold frames, but as in many gardens there is at this date a large demand which must be met, the gardener cannot afford to have a failure of his crop of fruit from red-spider. One great value of frame culture is that the crop can be easily retarded by applying a little shade or moist air, and as the first fruits in the open are not always as early as is required, the plants in the frames fill a void, and the fruits, as regards good quality, are equal to the best from the open beds. I do not advise planting out in frames, but just such cultural methods as are found to answer in houses; though if pot-plants are too few, and much fruit is required, say in June, I would carefully lift with a ball a number of the out-of-door plants, and place them in the frames. Lifted plants, it need hardly be said, require more attention in shading and affording moisture, especially at the start, than pot-plants.

A great gain with potted plants in cold frames is the saving of labour as compared with those on shelves. At Syon the pots are stood on a hard coal-ash bottom, which allows the water to drain quickly away, and is cool for the roots, and the plants do not dry quickly. The good quality of the fruit is a strong point in its favour, and varieties succeed that do not do so well grown in any other manner. The best British Queen Strawberries I ever saw were grown in cold frames, for the soil of the garden did not suit this variety. I recently saw some St. Joseph and St. Antoine de Padoue grown in cold frames for coming on late in June, and they looked as if the conditions suited them. Plants planted in cold frames about the end of the month of April, or early in the following month, fruit at the time named. The thinning and supporting the trusses should be seen to early, and nothing is gained by over-cropping. The smaller blossoms should always be removed, only the finest being retained. For many years Sir C. Napier and President were the favourite late fruiters in most gardens, but Royal Sovereign is now the leading variety, and it does well under cold frame treatment, the fruits being large and well coloured. *G. Wythes*.

MAY-FLOWERING TREES, SHRUBS, AND CLIMBERS IN THE SOUTH-WEST.

ABUTILON vitifolium is an attractive sight when, towards the end of May or commencement of June, it stands covered with its large lavender or white flowers in a sheltered nook. It occasionally attains the height of 20 feet, and the largest specimen that I know of is furnished to the ground with foliage, though it sometimes happens that trees when they reach a height of 12 feet or so lose vigour. *Akebia quinata* has borne its fragrant racemes of purple-brown flowers, and the snowy *Mespilus* (*Ame-lanchier canadensis*) its white ones. Plants of *Amygdalus nana* form a pretty sight when massed, and *Atragea alpina* is a charming plant when allowed to ramble over an old tree-trunk, and is covered by numbers of its pale blue and white starry blossoms; in many places, however, it proves a difficult plant to establish. *Azara microphylla* is producing its inconspicuous flowers; and *Berberis Darwinii* and its even more attractive relative, *B. stenophylla* ×, form clouds of orange flowers. *Cerasus Watereri* and the darker-flowered *H. J. Veitch* have been masses of bloom. *Choisya ternata*

has become whiter with each succeeding week; and a fine example of *Citrus trifoliata*, 7 feet high, has been white with blossom, which will doubtless be followed, as in former years, by fruits. *Clematis montana* is garlanding evergreens and trellises with a veil of ivory-white, and *Clanthus puniceus* is a mass of glowing scarlet colour on southern walls, in which site *Correa bicolor* and *C. cardinalis* are also blooming. The Judas-tree (*Cercis Siliquastrum*) has been shrouded in purple-pink blossom, and *Edwardsia* (*Sophora*) *grandiflora* has borne its racemes of yellow flowers. *Embothrium coccineum* is not yet at its best, but day by day its vermilion flower-clusters become more striking.

The Pearl-bush (*Exochorda grandiflora*) has been a vision of loveliness, and *Halesia tetraptera*, the Snowdrop-tree, has its slender branchlets thickly hung with drooping white bells; while many of the *Magnolias* have been in bloom, amongst which the

to expand its lavender blossoms; and of *Spiræas*, *S. confusa*, *S. Thunbergi*, and *S. prunifolia* fl.-pl., have made pretty pictures. *Staphylea colchica* has been profusely hung with drooping white flower-panicles; and the *Lilacs* are now in full beauty, the white *Marie Legraye* and *Marie Lemoine* bearing fine heads of large flowers, but *alba magna* leaves little to be desired. *Veronica Hulkeana* is flowering against a south wall, the *Weigelas* are blossoming, and the *Wistaria* drapes porch and pergola with its fragrant, lavender-coloured tassels. *S. W. F.*

ORCHID NOTES AND GLEANINGS.

LÆLIA TENEBROSA.

MR. R. G. FLETCHER, of Brighton, obligingly sends us a flower of *Lælia tenebrosa*, which presents some interesting features. In the first place, the parts

natural size, and a diagram showing a longitudinal section of the flower. Sep. represents the sepals, pet. the petal, lab. the lip, and col. the column.

ORCHIDS AT MR. TRACY'S.

In his nurseries situated in the Amyand Park Road, Twickenham, Mr. H. A. Tracy has a very pretty display, which chiefly consists of varieties of *Cattleya Schroderæ* and *Odontoglossum crispum*, of which there are several houses full of sturdy plants, many of them in flower. The plants of *Cattleya Schroderæ* yield a far greater variety in point of size and colour than any which have bloomed here previously, and so distinct are some of the forms, that they are being numbered and briefly described on the labels. The flowers vary from bluish-white with a lemon-yellow centre to Peach-blossom with an orange centre, and other varieties of these types have a more or less well-defined claret-crimson blotch on the lip, and some have the petals uniformly tinted, while in others the colour follows the veining. Some of the flowers have fragrance reminiscent of Hawthorn, but all are not alike powerfully scented.

The *Odontoglossum crispum* in flower were chiefly of the broad-petalled, round-flowered section, white or rose-tinted, a few being spotted with red-brown spots. Others in bloom were *Odontoglossum triumphans*, *O. Hallii*, *O. luteo-purpureum*, and other *Odontoglossums*; *Cypripediums*, *Oncidium sarcodes*, *O. Marshallianum*, *Sophranitis grandiflora*, various *Dendrobiums*, the pretty white and purple *Ærides japonicum*, and other showy species.

One of the most attractive and singular plants was a fine specimen of *Cirrhopetalum picturatum*, bearing ten spikes of its singularly-formed yellowish and purple flowers, which were all the more conspicuous by contrast with the larger and showier *Cattleyas*, &c.

ODONTOGLOSSUM CRISPUM

"ANNIE."

AMONG the few varieties of *Odontoglossum crispum* which received First-class Certificates at the late Temple Show was "Annie," shown by Mr. H. T. Pitt, Rosslyn, Stamford Hill. The flower (fig. 137) is large, white, tinged with purple, and heavily blotched with claret-purple—an attractive variety.

PLANT NOTES.

BRYANTHUS GLANDULIFORMIS AND SPIRÆA PECTINATA.

TWO very interesting plants are now in bloom here; the first is *Bryanthus glanduliformis*, a dwarf, peat-loving plant, not reaching a greater height than 3 inches, and notable for the large size and striking colour of its Pentstemon-like flowers. These latter, which are borne profusely, are 1½ in. long, and of the most intensely vivid magenta-red. The second is *Spiræa pectinata*. At first sight this plant would be mistaken for a mossy Saxifrage. The tufts of bright green foliage are not more than 3 inches in height; the flowers, borne on numerous short spikes, are of a soft cream colour. Both plants came to me from Mount Rainier, one of the highest of the Rocky Mountains. *A. K. Bulley, Neston, Cheshire.*

PLANT PORTRAITS.

CHERRY DUCHESSE DE PALUAT.—*Revue Horticole*, May 16.
CLARKIA ELEGANS.—*Meehans' Monthly*, May.

FRITILLARIA ORSINIANA, Parlatores, in *Wiener Illustrierte Garten Zeitung*, April. Native of S. Italy.

PEAR BONNE DE MALINES.—*Moniteur de l'Horticulture*, May.

ROSE JOHANNA SEBUS and GEORGE SCHWARZ, Tea.—*Rosen-Zeitung*, April.

ROSE OSCAR CORDEL, H.P., EUGENIE LAMERCH, POLYANTHA.—*Rosen Zeitung*, April.



FIG. 137.—ODONTOGLOSSUM CRISPUM "ANNIE."

most noteworthy were *M. conspicua*, *M. stellata*, *M. Lennei*, and *M. Soulangeana*. *Olearia Haasti* and *O. stellulata* are covered with their white stars; *Paulownia imperialis* has opened its lavender, *Gloxinia*-like blossoms; *Pieris formosa*, of which the finest example in the south-west is at Pentillie Castle, Cornwall, has been white with branching clusters of bloom; and *Piptanthus nepalensis* has perfected its yellow flowers.

Pittosporum Mayi is bearing thousands of small maroon-purple blossoms, and *P. Tobira* its white flower-clusters. The Bird Cherry (*Prunus Padus*) is a beautiful sight when clothed in its vernal array; but *P. Mahaleb pendula* is even more lovely, the drooping branches forming very cataracts of white blossom. *Rhodotypos kerrioides* has expanded its white flowers, and *Rubus deliciosus* is certainly peerless among the Brambles; *R. speciosus*, also in bloom, comparing but poorly with its white-flowered relative. *Solanum crispum* is commencing

of the flower, as is so often the case in monstrous Orchid flowers, are in twos. There are two sepals, one at the back, one in the front of the flower. Crossing these at right angles are two side petals, shown in the illustration (fig. 138, p. 370) as flat and expanded, but they were in reality folded in "conduplicate" fashion, as shown in the diagram. The upper or outer half of these side petals was sepaloid, whilst the lower or inner half was petaloid and lip-like. The true lip was absent, and the column is a little to one side.

DENDROBIUM DENSIFLORUM VAR. ALBO LUTEA.

This species, better known as *D. thysiflorum*, has, under ordinary circumstances, a flattish, expanded, spade-shaped lip. In a raceme sent us by a correspondent from Magdeburg the state of things is different, the lip being narrow and bent abruptly upwards, so as to conceal the column. The illustration (fig. 139, p. 371) shows a flower of the

THE WEEK'S WORK.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bicton, East Budleigh, Devonshire.

Asparagus.—The seeds that were sown early in the month of April have now braided, and if the seedlings are intended for replanting in the spring of 1902 or 1903, they should be thinned to a distance of 4 inches apart; but if for permanent beds, and they were sown in patches 12 or 15 inches apart, reduce the seedlings to one per patch—the strongest. If the ground be dry, afford water copiously before and immediately after thinning, plying the Dutch hoe between the rows the next day, and stir the soil frequently. In spite of the drought, these plants are making good progress. Beds in bearing should be hoed every week or so, as weeds, when allowed to make headway, prove a great nuisance after cutting has ceased, and they are then difficult to eradicate.

Beetroot.—In most localities Beet is now ready for being thinned. The usual distance at which the plants are left finally is 6 to 9 inches, according to variety. Beet are not usually successfully transplanted unless the taproot be preserved intact, and the plants afforded plenty of water in dry weather till quite re-established.

Scorzonera, Salsafy, &c.—These roots are the better if left to grow standing 9 inches apart, and Chicory at 6 inches.

Lettuce.—Let a sufficient number of Cos Lettuces be tied up when dry, to meet the demand, allowing ten days for the blanching. Thin successional sowings before the plants become spoiled by crowding together. Sow for the future on a north border, or where the land is slightly shaded for some part of the day.

Artichokes.—Jerusalem Artichokes should be moulded up similarly to Potatoes. Cut the heads of Globe Artichokes as fast as they become fit, that is before they begin to burst, for if allowed to remain for a longer period on the plants, it hinders the formation of flower-heads. When all the heads on a stalk have been taken, remove the stalk itself low down.

Parsley.—Thin to 6 inches asunder the earliest sown plants, and transplant the thinnings, if necessary, to make patchy lines good, or to ground that has been well manured and deeply dug. Dust the plants with lime late in the evening or early in the morning if slugs are doing harm.

Routine work.—As fast as pits and frames are cleared of forced vegetables, they may be utilised for Cucumber culture. The rain having softened the ground, delay no longer the final thinning of all crops that are fit, as not only can this kind of work be more expeditiously done then, but the crop suffers far less than when carried out in dry, hot weather. Earth-up Potatoes that are fit, first flat hoeing the ground to kill weeds.

FRUITS UNDER GLASS.

By MAICOLM MCINTYRE, Gardener to Sir CHAS. TENNANT, The Glen, Innerleithen, Peeblesshire.

Melons.—Sudden changes from bright to dull showery weather are trying to Melons, and are liable to cause canker. It is in dull weather that the fruit is most given to cracking. In dull sunless weather the evaporation of moisture is naturally arrested, and too much of this present in the stems and foliage may cause either canker or splitting. To counteract these ill effects, afford rather more fire-heat at night, the temperature being allowed to range from 60° to 65°, and by day 70° to 75°, with a small volume of air admitted at and above 75°, and allowing an advance by sun-heat to 85° or 90°, closing the pit or house when the warmth is 85°, but not so as to raise the temperature above 85°. Keep the houses containing young plants, or those swelling their fruit, moist; and slightly wet the foliage, walls, and flowers. Keep the soil round about the stems perfectly dry, and thus avert canker. Feed plants liberally; those plants in fruit do not allow to suffer from lack of water, but afford them weak liquid-manure. Frequently examine the stems and bine, and if there are the least signs of canker or decay, carefully scrape the affected parts and sprinkle the surface with newly-slaked lime. Fertilise the female flowers daily, and in order to favour setting, keep a somewhat dry atmosphere,

and do not prune the bine with the knife during that period, but pinch out the points of the shoots at the first or second joint beyond the fruit. Earth-up the roots as soon as the fruit is set and swelling, and remove superfluous growths, not allowing them to interfere with the principal leaves. Shade as little as possible, and then only to prevent flagging.

Melons and Cucumbers in Pits and Frames.—Good crops of both may be had without the aid of much bottom-heat or fire-heat, but the earlier in June a start is made therewith the greater the chances of success. A gentle bottom-heat given off either by a partially exhausted hot-bed or else by a slight-bed made with a mixture of old and some fresh stable-manure and leaves will afford the plants a good start. Place under each light about one wheelbarrow-load of rather strong loam mixed with some old mortar rubbish reduced to moderate fineness, or road scrapings if deficient of grit, and press the whole firmly together. Into each hillock when warm put one strong, healthy plant, and press the soil firmly about the roots, and afford water. The surface of the soil should not be more than 1 foot from the glass, and if the weather be bright, a small amount of shade may be applied for a few days after planting. Cucumbers require a lighter and more turfy compost, and do not want to be so firmly planted. Afford air sparingly at the first, though enough must be admitted to prevent roasting. Close early in the afternoon, and syringe the beds well at that time. Seed may yet be sown to raise plants for frames at present occupied by tender bedding plants.

Strawberries in Pots.—Strawberries have been excellent at The Glen this season, for the runners were established in good time; and there is nothing like stored-up matter the season previous to forcing. If there is nothing stored in the plants, it is quite clear not much can be obtained from them. Successional plants are affording excellent fruit. Water is needed twice a day in dull, and more often in bright weather, and liquid-manure two or three times a week. Let the air of the house be moist, and avoid drying currents, especially of cold air. Plants swelling their fruits under large panes of glass will be the better for a slight shade from powerful sunshine for an hour or two in the middle of the day. They will swell under this method to a fine size, and it will not injure flavour or good quality if the glass is not continued over the plants for too long a time. The drying effects of hot sunshine act prejudicially in the early stages of swelling, especially when the necessity arises of admitting air very freely, which the slight shade obviates, otherwise afford all the light practicable in order to secure good colour and high flavour.

THE HARDY FRUIT GARDEN.

By C. HERRIN.

Disbudding.—This operation should be carried out regularly on trained and bush Pears, cordon and bush Apples. In carrying out this kind of work, first of all remove from the inner parts of the pyramids and bushes such minor growths as obstruct the light, doing this much less severely to Apples than to Pears. While the growth is soft, the shoots and buds may be easily rubbed off by the hand. Apple and Pear cordons require a considerable amount of disbudding if pruning with the knife is to be avoided later on; for although worked usually on dwarfing stocks, the bud growths on cordon Apples much exceed the number which can be retained, and it is best that they should be removed whilst young. The most thickly-placed shoots should be the first taken, pinching the points out of those which will be eventually retained as spurs, and rubbing off all that are not wanted to form a duly-balanced head. The trees should be looked over at short intervals of time, and some shoots removed each time for a few weeks longer, as trees stripped of a great quantity of shoots at one operation are injuriously checked. Where the leading shoot of a trained tree has reached the top of the wall or fence, or it has filled its allotted space, pinch the points at the second or third leaf from the starting-point of the new growth. If space allow of further development, let the shoot grow unstopped, and train it whilst pliable in the right direction.

Morello Cherry.—The fruits are now swelling freely, and if too abundant on wall-trees, rub off those that press against the wall. Disbudding and

thinning may also be carried out on low standards of the Morello and La Belle Magnifique, a fine, prolific, bright red Cherry of the Morello class. As these Cherries fruit mostly on the wood made the previous summer, provision should be made for laying-in as many of the young shoots growing from the upper sides of the branches as space can be found for without unduly crowding them. A modification of this kind of thinning is required by bushes and low standards. Let the remains of blooms be cleared away, and not left to form lurking places for injurious insects and otherwise; and to aid in clearing away this sort of refuse, afford them a washing with clear water with the wall-engine. If black aphid be present on the trees, apply soft-soap water or Quassia water. If the prepared extract of Quassia be used, half a pint of the extract to 2 gallons of rain-water is sufficiently strong.

Late-planted Fruit-trees.—The soil in which these trees are growing should be examined, and if it be found in a dry state, afford water copiously, and apply a mulch of manure 6 inches thick. If the plants receive an occasional syringing in the evening, they will derive much benefit therefrom.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. I. MEASURES, Esq., Cambridge Lodge, Flodden Road, Camberwell.

Oncidium macranthum, O. superbiens, O. serratum, and others belonging to this section of Oncidium, having prominent flower-buds, should be secured in such a manner that the flowers may be displayed advantageously. This is much better than to leave the work till the flowers have opened. If the flower-scapes have been trained around small sticks as previously advised, the difficulty is easily overcome; but where they have been allowed to ramble among the other plants, some more attention is necessary.

Odontoglossum Harryanum does best in a house where the temperature during the winter months is maintained at about 5° higher than the Odontoglossum-house, and the conditions during the summer are similar to those prevailing in the cool-house. *O. Harryanum* should be annually repotted, and the present time when new roots are being formed at the base of the advancing growths is the best for the purpose. The Orchid-pots should be of a fairly large size relatively to the plants, the drainage clean and ample, and the compost of equal parts of turfy-peat and chopped sphagnum-moss. Press the compost moderately firmly, and form it into a slight mound at the centre. The plant should be afforded moisture at the roots liberally at all seasons, and in hot weather it is soon injured if allowed to become in the least degree dry. The staging should be kept moist during the summer months, and shading from the direct rays of the sun carefully attended to, together with ample ventilation during the hottest part of the day. This species always seems to suffer from the production of flowers, and the bulbs will shrink after the flowers have been removed; but their normal condition with careful attention is quickly regained. This plant has proved to be one of the most useful among the Odontoglossums for hybridisation purposes, and the whole of the hybrids that have been raised from it as one of the parents, bore unmistakable marks of its influence.

Miltonia vexillaria.—As the plants pass out of flower, remove the lower portions of the flower-stalks, or split them open in such a manner that they may wither and dry up quickly; and all dead portions of the leaves at the base of the growth should also be removed, and the plants be kept drier at the roots, only sufficient water being afforded as will retain the pseudo-bulbs plump. The chief difficulty with *Miltonia vexillaria* occurs immediately after flowering, the least excess of moisture about the base of the pseudo-bulbs quickly causing decay to set in, in the axils of the leaves, and this is quickly conveyed to the pseudo-bulb, and in a short period sees the loss of the plant. Under dry conditions of the house, *Miltonia vexillaria* is subject to infestation by yellow thrips. Vaporisation with XL-All twice or thrice a month, or even more frequently, is then called for.

Masdevallias of the botanically interesting species should be carefully shaded from bright sunlight, and endeavours made to keep the house in which they are grown as cool as possible during the

warmer months. Let the plants be examined daily as regards their needs of moisture at the root; open the ventilators early in the day, and frequently damp the bed or staging between the pots and the floor of the house. Scale and green-fly are almost sure to cause trouble at this season, and sponging of the leaves and fumigation at regular intervals must be resorted to, to keep these pests in check.

THE FLOWER GARDEN.

By T. H. SLADE, Gardener to Lord Poltimore, Poltimore Park, Exeter.

Roses.—Examine the plants for the Rose-maggot, pressing between the finger and thumb any rolled-up leaves. Timely attention should be given to thinning or disbudding young shoots, it being more satisfactory to have a few strong shoots, than a greater number of weak ones, and many of them blind. When extra fine blooms are desired of any variety, the thinning of flower-buds is very essential. Roses growing on walls or trellises, if aphid is present on them, should be afforded one or more applications of "Niquas," or Tobacco-water, suitably diluted. If the Roses are growing against warm walls, insecticides should be applied late in the afternoon, or after the sun has passed off the wall. Fasten the young shoots of climbing Roses securely, but not so as to give them a bunched appearance.

Alstroemerias (Peruvian Lily).—Most of the members of this very useful and attractive genus are worthy of cultivation provided suitable positions can be found for them, which is on a sunny border, or a warm aspect near a south or west wall. The present is not altogether a suitable time for planting unless the plants are growing in pots; but I would direct attention to them at this date as the flower-spikes are commencing to show. Where the soil is not fully covered by the plants, it should be mulched with half-rotten manure, and water copiously afforded before giving the mulch, the warm position the plants require rendering much water a necessity in light soils. In planting groups of this plant, if the position is not warm and dry, a very large hole should be dug out, and a good quantity of brick-bats placed at the bottom of the hole, and a layer of half-rotted manure put over these before filling in with the prepared soil. A generous compost should be afforded *Alstroemerias* when planting them, root-disturbance being very injurious. The tubers may be planted in the autumn at about 6 inches deep, and a mulching of leaf-soil placed over them as a protection against frost. After flowering, the seed-vessels should be removed, but the stems left to die down naturally. For general purposes, *A. chilensis*, *A. pulchra*, and *A. aurantiaca* are very beautiful, but there are several others which may be grown, viz., *A. pelegina*, rather tender; *A. psittacina*, and *A. versicolor*.

Pyrethrum roseum varieties.—These plants will require water frequently if the weather keeps warm and dry, and a mulch of half-spent Mushroom-bed manure spread round about them. Similarly to Phloxes, these plants soon show distress if they lack water at the root.

Poppies.—The Iceland and oriental varieties are as easily grown as the Shirley Poppy, but the first-named is suitable for growing on spots where the others are not so suitable; and in the three colours, yellow, orange, and white, they are effective garden plants. They may be treated like biennials, but being liable to die out the second year, seed should be sown annually, so as to make sure of having the plants. The oriental Poppy is the more ornamental, also *P. bracteatum*, with orange-scarlet flowers, having scarcely any black at the bottom of the flower; while others are scarlet, and have black markings at the base of the petals in the shape of a cross. This is the handsomest variety, and at the present time the plants are very showy in the borders. Poppies thrive in any good ordinary soil, and if the seed is gathered when ripe, and sown in the open ground, a stock of plants may soon be raised.

Lilacs.—The present time is a good one to visit the nurseries and take notes of desirable varieties for future planting. Of singles, alba virginialis and Marie Legrange are excellent white-flowered varieties; Souvenir de Louis Späth has unusually large clusters of dark purple flowers, and is very distinct; Dr. Lindley is also good. The double forms are very handsome, especially Emile Lemoine, La Tour d'Auvergne, Leon Simon, and Madame Lemoine, a very fine white; the three first-named

being of varying shades of mauve. Grown as advised in a previous calendar, good clusters of bloom are the result.

Miscellaneous work.—Dahlias, Zinnias, and similar plants, should be planted out without delay. Zinnias should be planted in showery weather, but such plants can, however, be kept watered after being planted, and will grow away better than if kept in pots, waiting for more favourable weather conditions.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HUSSEY PACKE, Esq., Prestwold Hall, Loughborough.

Winter-flowering Zonal Pelargoniums.—Let the best of the early-propagated plants be shifted into 7 and 8-inch pots, in which they will grow to flowering size, and the weaker or those which were struck from cuttings at a late date, into 5-inch ones. The potting compost should consist of sandy loam $\frac{3}{4}$, leaf-soil and well-decayed manure $\frac{1}{4}$, together with a 6-inch potful of bone-meal to every wheelbarrow-load of soil, affording as much sand as will allow ready passage for water. The pots must be well drained with crocks, and these covered with turfy bits of soil, and the soil should be made firm with a rammer round the old ball. Allow the space of an inch in depth for holding water. Make sure that the soil is thoroughly moistened before potting, then for several days after re-potting no water need be afforded. Put the plants on a bed of coal-ashes, cover with an ordinary garden-frame, syringe them daily, and apply shade against bright sunshine. Scarcely any air need be afforded for the first few days, but in fine weather the lights may be pulled off the frames at night. When fairly re-established, the plants may be exposed day and night. Pinch the points of the shoots occasionally, and remove all flower-trusses. Afford the plants plenty of space, so that the sun may ripen the wood; turning them round often, so as to obtain evenly balanced heads.

Euphorbia (Poinsettia) pulcherrima.—Cuttings should now be taken, and having filled a sufficient number of thumb-pots with a mixture of loam, leaf-soil, and sand, insert a cutting in the centre of each, filling in around the cuttings with silver sand, and affording water. The pots should be plunged in a hot-bed frame, having a bottom-heat of 85°. Keep the cuttings constantly syringed, it being essential to success in rooting them that they do not flag. Admit air by tilting the lights at night, and afford shade when occasion requires. Cuttings may be struck at any time between the present time and early in the month of August. Plants raised last year may now have their shoots cut back to two buds, and be placed in a pit having a temperature of 60°, syringing them twice a day. When the new shoots have made about 1 inch of growth, let the plants be shaken out of the exhausted soil, and repotted, if possible, into pots a little smaller than those they had occupied.

Chrysanthemums.—Where a collection of these plants is a large one, let everything be got in readiness for the final repotting, which will soon have to be carried out. If the quantity of compost is large, let it be mixed together betimes, as it will ferment sometimes, and this fermentation should have subsided before the compost is used. Loam of middling heaviness which has been in stock for at the least three months, is best for these plants; the turfy portion being retained, and to three parts of loam add one part of decayed manure and leaf-soil in equal proportion, add a 7-inch potful of bone-meal and soot to every wheelbarrow-load. In order to give free passage to water, mix mortar-rubble sifted finely with the soil. For the Japanese and incurved varieties, the most suitable pot is one of 9 inches in diameter, and these should be got in readiness, placing an oyster-shell or large convex potsherd over the hole; cover this with a few $\frac{1}{2}$ -inch steamed bones, and then some rough turfy soil. The potting-soil must be made very firm with the potting-stick, and the plant put sufficiently deep to allow of $1\frac{1}{2}$ in. depth of space for holding water. The old ball may not be covered with new soil more than $\frac{1}{2}$ -inch deep. Each plant as it is finished should be provided with a stake sufficiently long to support the stems to the last. Place the plants in single lines at the margins of kitchen-garden paths. Every plant should be afforded water before being repotted, as applying water immediately after repotting tends to sodden and render the soil sour. Frequently during the day

syringe and in other ways damp the foliage till the plants are re-established. When water has become necessary, apply it in quantity sufficient to moisten the entire ball. Pompons may have 7-inch pots, and the points of the shoots may be nipped off the first week in July. Pompon Chrysanthemums make useful edgings to masses of the large-flowering varieties, or for the decoration of the conservatory, or forming groups.

Correction.—In my Calendar of last week *re* Gesneras, read *G. exoniensis* for *G. cinnabarina*.

THE APIARY.

By EXPERT.

Sections.—All of these should now be placed on the hives, excepting in the north of England, or where stocks are not very strong. Many weak ones will, I fear, be found this year, as the weather has been so very unfavourable for the bees for some time past. A glance at the stocks will in many instances lead the bee-keeper to suppose, seeing the bees are very plentiful, that they are ready for the sections, but an examination of the frames will soon show that stores are very short, and it will be useless to make use of section crates. The frames in the body-box must first be filled, or nearly so, as the extra room given will only cause the heat of the hive to be reduced, and no advantage be gained by doing so; on the contrary, a very decided disadvantage will ensue. Scrape all the top-bars, also the bottom of the hives and sides before placing on the section crates or shallow frames, as the case might be, and use a little vaseline to keep the bars from getting too tightly fastened down by the bees. In cleaning the bottoms of the hives, remove the dummy-board, and work back the frames from the back, removing, if necessary, one or two from the back, first sweeping off the bees, which will give more room to work; and then with a small brush having a long handle, and a scraper, as you clean along, move the frames forward, and so on till the job is finished. Then replace the dummy-board, and if ready for supering, have your crate by your side in readiness. In this, as in all other cases with bees, work carefully, and disturb the insects as little as possible. Should any of the combs be dirty and black, replace them with fresh ones, wired, which will keep them from breaking, should you want to extract them or send them off by rail. After the super crates are put on, great care should be taken that the bees do not work anywhere but in the crate, and any small space left will allow the bees to get through, and work at the side, and sometimes in the roof of the hives, which not only causes loss of sections, but a fearful mess to get out, and upsets the bees as well, and will often compel the bee-keeper to call in someone to assist him; and besides upsetting this particular stock, it may upset others and cause them to rob. Shallow frames should all be wired, as the constant handling and extracting weakens them very much, and causes a good deal of loss and inconvenience.

Markets.—The season so far bids fair to be anything but a good one, so that bee-keepers should be very careful in giving quotations for large quantities; this will be a source of loss perhaps to bee-keepers who have to buy sections largely to make up their contracts.

"FIELDS, FACTORIES, AND WORKSHOPS."

Prince KROPOTKIN, the Russian scientist and exile, promises to bring out immediately a popular edition of his *Fields, Factories, and Workshops*. The book is a study of economic tendencies in the realms of modern industry and agriculture. It has been too readily taken for granted that the progress of industry must crush the petty trades and sweep the village workers into towns and factories; that the commercial world must look abroad for any extension of its markets; that the people of this country cannot profitably produce the millions of pounds' worth of food-stuffs we now import from foreign shores; and that all we have to do to restore our tottering commercial supremacy is to graft "technical schools" on to our present educational system. Prince KROPOTKIN examines these theories in the light of the facts he has gathered in his peregrinations over the civilised globe. No violent schemes of socialistic or anarchist reform lurk in these pages. They are eminently sober and practical. Those interested in farming or gardening will find in them a mine of interesting information, while to students of social questions they will prove fresh and thought-inspiring. Messrs. SWAN SONNENSCHN & Co. will be the publishers.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, JUNE 11	Cambridge Horticultural Society's Show.
	Horticultural Show at Evesham, in connection with the Hereford and Worcestershire Agricultural Society (3 days).
WEDNESDAY, JUNE 12	Yorkshire Gala and Horticultural Exhibition, at York (3 days).
	Royal Cornwall Agricultural Association, Show at Bodmin (2 days).

SALES.

TUESDAY, JUNE 11—Absolute Clearance Sale of Greenhouse and Bedding Plants, Greenhouses, Boilers, &c., at The Woodlands Nursery, Hither Green, Lewisham, by Protheroe & Morris.

FRIDAY, JUNE 14—Imported and Established Orchids, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick—60°4'.

ACTUAL TEMPERATURES:—

LONDON.—June 5 (6 P.M.): Max. 75°; Min. 53°.

June 6.—Fine, warm.

PROVINCES.—June 5 (6 P.M.): Max., 70°, home counties; Min., 52°, Orkneys.

THE perusal of blue books is, as a rule, not a very entertaining procedure; but there are exceptions, and one such is before us in the *Minutes of Evidence taken before the Departmental Committee on Botanical Work, and Collections at the British Museum, and at Kew*. We have already alluded to the nomination of this Committee, and to the general conclusions arrived at by a majority of their number, including the Chairman, Sir MICHAEL FOSTER.

Whether any practical result will ensue from the labours of the Committee is, if we may judge from the history of previous committees of a similar character, somewhat doubtful. Whatever may be the result, the Report and Minutes of Evidence will always have an intrinsic value of their own, quite apart from their immediate purpose. This will be understood when it is pointed out that the document before us, edited most conscientiously by the Secretary, Mr. B. DAYDON JACKSON, contains, in addition to the Minutes of the present Committee, an excellent summary of what was done on previous occasions of a similar character. It thus forms an historic document of the greatest value, and of surpassing interest to those concerned in the scientific aspects of our two great botanical establishments, the Royal Gardens of Kew and the Botanical Department of the British Museum. The interest is not purely scientific or botanical, it is also largely horticultural.

The witnesses examined on the present occasion were the Directors of the two establishments concerned, Sir WILLIAM THISELTON-

DYER and Mr. GEORGE MURRAY; Sir GEORGE KING and Mr. C. B. CLARKE, both former Superintendents of the Royal Botanic Gardens, Calcutta; Mr. CARRUTHERS, the former Keeper of the Herbarium at the British Museum; Mr. FAWCETT, formerly an official of the Museum; Mr. W. BOTTING HEMSLEY, the Curator of the Herbarium at Kew; Mr. JAMES GROVES, Mr. E. M. HOLMES, the Curator of the Museum of the Pharmaceutical Society; Mr. HANBURY, Dr. MAXWELL MASTERS, Professor J. B. FARMER, of the Royal College of Science; Mr. A. C. SEWARD, Mr. W. P. HIERN, Mr. H. J. ELWES, Dr. HENRY WOODWARD, Dr. SCOTT, and Prof. E. RAY-LANKESTER, the Superintendent of the Natural History Department of the British Museum.

From such a body of men, all more or less familiar with the working of both establishments, very interesting evidence might have been expected, and the readers will not be disappointed in this expectation. On the whole, making due allowance for the "personal equation," for reasonable bias on one side or the other, for permissible differences of opinion according to varying requirements or different points of view; on the whole, we say, there is much more agreement than might have been expected. Whilst some are enthusiastic in their praise of Kew, others are scarcely less so in their eulogiums on the museum. It is right to remember that the objects and the conditions of the two establishments are to some extent different, and therefore that comparison between them is more or less "odious;" but it will give justifiable satisfaction even to self-deprecating Britons to know that we have two establishments which elicit the admiration, not only of our own countrymen, but also of foreign botanists. The testimony of Mr. J. ELWES to the efficiency of Kew is most important, as coming from a traveller, a naturalist, and a botanist, cognisant of the special value of the garden for purposes of horticultural botany. No effort must be spared to maintain the efficiency of the botanical department, whether it be in the future concentrated under one head, or whether its dual character be still maintained. Germany and the United States in particular are close on our heels, and the publications of and in connection with the Berlin garden at present set us an example as to quality and promptness of publication, and show that even in our great stronghold, systematic botany, we must look to our laurels. In particular, and before all things, the Kew Herbarium must be rendered fire-proof. It is appalling to read of the risks to which, in spite of recent measures, it is still exposed.

We have no intention here to attempt any analysis of the evidence given by the several witnesses, still less to criticise it. We have the fullest confidence in the Commissioners whose findings we have already alluded to. What we specially desire to call attention now to, is the historical summary furnished in the appendices by Mr. DAYDON JACKSON, and the similar record furnished by Mr. GEORGE MURRAY and by Sir WILLIAM THISELTON-DYER respectively. These gentlemen were called on to give information concerning the cost, nature, objects, mode of working, and results of the departments entrusted to their care, all of which, of course, is of paramount importance from the present point of view, but of less intrinsic interest to the student who desires to know how the present establishments originated, and how they have grown and developed to their present imposing proportions.

Mr. MURRAY's summary is less full than that of Sir WILLIAM THISELTON-DYER, and we should have been glad if the British Museum authorities could have furnished us with some further details concerning the many "old" collections they possess over and above those of SLOANE and BANKS.

Sir WILLIAM THISELTON-DYER, on behalf of Kew, has put in a detailed reply to the enquiries of the Commissioners, which is of the highest value. It is full of interest to gardeners as well as to botanists, as will readily be understood by those who recognise the great strides that have been made in horticultural matters of late years at Kew. We sincerely hope that Sir WILLIAM THISELTON-DYER's most able report will be published separately, as it contains so much information which is not generally accessible. On another occasion we hope to give some extracts from this State paper. In any case, we trust that one result of its publication, even in its present form, will be to place the establishment at Kew and its Director under more clearly defined relations to the government authorities than seems at present to be the case. Only by some such means can the risk of incurring such an odious scandal as that known as the Ayrton case be avoided. The memory of the atrocious manner in which a former Director was treated by an ignorant and unsympathetic Minister still rouses our indignation. It is not known to the present generation, but to their predecessors the horror of it is not even yet effaced.

OUR SUPPLEMENTARY ILLUSTRATION with this number affords a view from another point of Mr. FRANK CRISP's remarkable rock garden at Friar Park, Henley-on-Thames, of which we published a description, with several illustrations, in our issue for October 28, 1899. Our present photograph shows to some extent the large scale upon which the formation of the rockery has been devised, and depicts some of the largest stones which have been used in its construction, one of which weighs as much as six and a half tons. They are Yorkshire stones, and it was necessary to bring 2,000 tons of them from Leeds for the completion of this rockery, different parts of which vary in height from each other, to the extent of about 35 ft. Now that the plants have become thoroughly established, we hope to give some fuller details concerning them upon a future occasion.

ROYAL HORTICULTURAL SOCIETY.—The Rev. Prof. G. HENSLOW, M.A., V.M.H., has arranged to deliver the following lectures at Chiswick on Wednesday evenings at 8 o'clock:—June 12: "Propagation of Plants without Seeds." June 19: "The Awakening of Buds and the Sleeping of Leaves." June 26: "How Plants Climb." July 3: "Injuries to Plants by Smoke."

DR. BRETSCHNEIDER.—On May 14 (?) Dr. BRETSCHNEIDER, Councillor of State, St. Petersburg, and one of the most distinguished Chinese scholars of his time, died. For many years he acted as physician to the Russian Legation at Peking, and made the most of his opportunities to investigate Chinese history, geography, archaeology, and, last but not least, Chinese materia medica. Having an extensive knowledge of the Chinese language, he was able to correct many errors made by previous writers on Chinese drugs; and his observations and writings are as accurate and trustworthy as those of DANIEL HANBURY. The following works bear witness to his industry and versatility:—*On the Study and Value of Chinese Botanical Works; Fu sang, or Who Discovered China? On the Knowledge Possessed by the Ancient Chinese of the Arabs and Arabian Colonies, Notes on Chinese Medieval Travellers to the West, Medieval Researches from Eastern Asiatic Sources, Archaeological and Historical Researches in Peking and its*

Environ. Two of his works, viz., *On the Study and Value of Chinese Botanical Works*, published at Foochow, 1870, and Part 2 *Botanicon Sinicum: Notes on Chinese Botany*, published at Shanghai, are in the library of the Society, the latter having been presented by the author. It is a veritable treasury of information on Chinese medicinal and economic plants. He was an honorary and corresponding member of several learned societies, including the Pharmaceutical Society of Great Britain. *Pharmaceutical Journal*.

VIBURNUM MACROCEPHALUM.—Mr. JNO RUSSELL, of Richmond, Surrey, informs us that in his Isleworth Nursery he has a plant of this species at present bearing 170 blooms. He believes the specimen to be one of the best in the country.

THE PLANES.—Mr. F. JAENNICKÉ, in a paper mentioned in the *Botanisches Central Blatt*, n. 8, 1901, concludes that there are six species and eleven varieties, as follows:—

1. *Platanus orientalis*, L. Oriental.
var. *liquidambarifolia*.
" *vitifolia*.
" *cuneata*.
" *digitata*.
2. *P. occidentalis* occidentalis.
var. *pyramidalis*, gardens.
" *hispanica*, gardens.
" *tubifera*, gardens.
" *Suttneri* (albo-variegata).
" *Kelseyana* (aureo-variegata).
" *Lioidaniana*, Mexico.
3. *P. acerifolia*, Willd. (perhaps a variety of *occidentalis*; perhaps a hybrid between *P. occidentalis* and *P. orientalis*).
4. *P. racemosa*, Nuttall, California.
5. *P. mexicana*, Moricand, with a var. *peltata*, Mexico.
6. *P. Wrightii*, Watson, Mexico and Arizona.

This note should be read in connection with Mr. BEAN's article on p. 363.

RECENT DISCOVERIES IN HEREDITY.—At the Royal Horticultural Society's meeting on Tuesday last, Mr. W. BATESON gave a lecture on "Recent Discoveries in Heredity." The past year will, he said, long be memorable for the rediscovery and confirmation of the principle which would henceforth be known as Mendel's Law. In the cases to which this principle applies, when a cross is made between parents possessing dissimilar characters, the reproductive cells of the resulting cross-bred organism are pure in respect of the original parental characters. The proposition thus briefly put, leads on to a number of deductions of great scientific, and it might even be of practical importance. Mendel's paper, unsurpassed for penetration and lucidity of statement, will shortly appear in translation in the *Horticultural Society's Journal*. The author, who was abbot of an Augustinian house in Brünn, met with no recognition in his own day, and it was only last year that his work was rediscovered and confirmed by Prof. DE VRIES, Dr. CORRENS, and Dr. TSCHERMAK, all working independently. Mr. BATESON described various extensions of the Mendelian principle, and exhibited in illustration specimens of *Lychnis*, *Atropa*, and *Maize*. The latter he owed to Prof. DE VRIES and Mr. WEBBER, while the first two had, amongst other subjects, been extensively studied by Miss SAUNDERS in Cambridge. There was no doubt that the principle applied to animals also, and in illustration he referred to his own experiments with poultry. Work in this field was urgently needed. The experiments, though necessarily prolonged, were of a simple character; and he would be glad to indicate definite lines of investigation to anyone who cared to pursue them.

FLOWERS IN SEASON.—We have received from Mr. ANTHONY WATERER, Knap Hill, Woking, flowering shoots and sprays of a number of trees and shrubs, most of them common in gardens in this country, but deserving of still more extended planting. There were *Wistaria sinensis alba*, a plant having racemes of white flowers, rather more lax than is the case with the type, and withal very graceful; *W. sinensis flore-pleno*, the

flowers having the colour of the type, and showing much doubling of the petals; *Aesculus flava*, the yellow-flowered Chestnut, which makes a handsome garden tree, and has yellow, sweet-scented flowers, that rarely set many fruits—the tree is a native of the United States of America; *A. carnea*, *A. glabra*, and *A. rubicunda* of some botanists, is a light scarlet-flowered Chestnut, having massive spikes and foliage; *A. carnea* Briotti is similar, but the colour of the flowers is a rich crimson, a most effective tree for a lawn or avenue; *Magnolia acuminata*, the so-called "Cucumber tree," because the seed-vessels look like a Gherkin before they open and expose the red seeds within—the blossoms, of a greenish-yellow tint, were taken from a bush 5 feet in height; *M. Fraseri* (auriculata), with pale yellow flowers.

STRAWBERRIES FROM FRANCE.—Now that we are having Strawberries on the market from the continent, we make a note as to whence some of our supplies emanate. Thus we learn from Brest that last year about 1,700 tons were exported to the United Kingdom, of an estimated value of £48,000. For one district this seems a very fair trade.

DUTCH HORTICULTURAL AND BOTANICAL SOCIETY.—On the occasion of the meeting on May 8, 1901, of the Floral Committee of this Society, the Committee awarded First-class Certificates to Mr. B. RUYSS, of Dedemsvaart, for *Aubrietia Moerheimi*; to the Zoological Garden of Rotterdam, for *Cineraria hybrida* Vieux Rose. A Certificate of Merit to Mr. H. C. HACKE, of Baarn, for *Selenipedium caudatum* var. *Wallisii*; a Botanical Certificate to Mr. W. C. BARON VAN BOETZELAER, of Maartensdijk, for *Vanda Parishii* van Marriottiana; a Silver-gilt Medal to Messrs. GRATAMA BROS., of Hoogeveen, for a collection of cut flowers from Roses. H. C. Zwart, Secretary.

PLANT NOTES.—From Mr. HENKEL, of Darmstadt we have received specimens of—

Eriogon glandulosum.—A dwarf perennial with linear-lanceolate leaves and blue flower-heads, nearly an inch across, and reminding us of the Cape Daisy.

Pentstemon riparium.—A tall-growing species with oblanceolate leaves and tall racemes of blue flowers.

Mamillaria Brandegii.—A cylindrical Cactus with densely-packed, spindle-shaped fleshy processes, each surmounted by a tuft of straight spreading pinkish spines.

PUBLICATIONS RECEIVED.—*Annual Report of the Secretary for Agriculture, Nova Scotia*, 1900. Besides reports from various stations, this includes papers on Cranberry Culture, by J. S. Bishop and by Henry Shaw.—*Bulletin of Miscellaneous Information*, Botanical Department, Trinidad, April, 1901. Contents: Prussic Acid in Cassava, Carapa Guianensis, Incidental Increment of Plant Food in Soils, Cacao Disease, Sisal Hemp, &c.—*Annual Report on the Botanic Gardens, Straits Settlements for 1900*: By H. N. Ridley. Details satisfactory work and progress in the various stations.—From the Imperial Department of Agriculture for the West Indies: *General Treatment of Insect Pests*, a pamphlet containing brief directions as to the means to be adopted for the destruction of garden and crop pests.—*Report of Experiments on Farm Crops conducted at the County Council Farm, Hutton, and other centres in Lancashire during 1900*. Issued by the County Council for the County Palatine of Lancashire. This gives the results of experiments on Meadow Hay, Clover Hay, Potatoes, Swedes, Liming of Meadow Land, Pasture, and Spraying of Charlock with solutions of copper and iron sulphate.—*Scientific Papers and Letters*, by A. H. Smee, M.R.C.S. (Herald Office, Carshalton).—*Grasses*, a handbook for use in the field and laboratory, by H. Marshall Ward, Sc.D. (Cambridge University Press. London: C. J. Clay & Sons).—From the County of Essex Technical Instruction Committee, Biology Section. Holiday Courses for Teachers. Field Studies in Natural History.

BOOK NOTICE.

SANDER'S ORCHID GUIDE.

This excellent new work, embodying the results of a vast amount of skilful labour and research, is put together in a concise and practical manner which will render it of the highest value to all Orchid-growers and amateurs, both experienced and inexperienced, in whose interest it is advanced. The book, which consists of 330 pages, commences with a chapter of general instructions in Orchid-culture, further cultural instructions being also given under each genus. At p. 7 commences the descriptive list of species and hybrids, the pages containing the species being set out in six columns, the first giving indication of the temperature in which the plant should be grown, the second the name of the plant, the third the country from whence it comes, the fourth column a brief description, the fifth its season of flowering, and the sixth, in the case of plants which are commonly obtainable, the price. A certain number of the hybrids are enumerated after the species under each genus, the natural hybrids being marked with an asterisk; but the general enumeration of hybrids, which is brought up to a recent date, is at the end of the book. To facilitate the acquisition of information from all parts, the enumeration of the hybrids is repeated under three tables: No. 1 giving the name of the hybrid in the first column, the seed parent in the second, and the pollen parent in the third; the second table has the seed parent first, and the name of the product in the third column; and the third table is similar to the second, but gives the pollen parent in the first column. The value of these arrangements to those who have need to consult the list is evident, as any point to be determined can be settled at a glance.

In dealing with the species and varieties, although prominence is given to garden nomenclature understandable by the gardener, much botanical information is conveyed; and in dealing with the hybrids, the enumeration of those bearing the same names but of different parentages is not without its uses. It is impossible to conceive how a greater amount of information of general and of special interest could be got within the covers of a single work. It may be had from Messrs. Sander, St. Albans.

TECHNICAL EDUCATION IN HORTICULTURE.

MANY of us are looking forward with a certain amount of interest to the particular bearing Sir John Gorst's Education Bill will, if passed in its present form, have upon technical instruction in horticulture in the counties. Taken as a whole, it is no doubt a step in the right direction, even if it does not go quite so far as some of us would wish. Whether all forms of education, elementary, secondary, and technical, are placed under one authority in suitable areas over the whole of England and Wales, or whether educational governing bodies are multiplied, are simply matters which will be considered in the near future; but this for the present need not concern us as horticulturists. Technical instruction as at present organised and carried out, has been subjected to much adverse criticism, and this from those qualified by education and practical experience is always useful, as it greatly helps to the establishment of the work on a more substantial and satisfactory basis. On the other hand, there are others, to whom no form of technical instruction is acceptable; but these are only drags on the coach of educational progress. As a nation, we have to face the most formidable foreign competition, and the truest patriots are those who by their help and influence, will do all they possibly can to place us amongst the most educated civilised nations of the earth. This is well understood by the best amongst us; and thus we certainly can, with the greatest confidence, look forward to a prosperous future for educational progress in this country. "Forward, to the front!" must be our battle-cry.

Horticulture is not the least important branch of technical instruction. The garden: the cultivation of fruit, flowers, and vegetables, in a very great measure affects the lives and associations of the great majority of the people, and thus it has become deservedly popular. I have now for several years been engaged in the work of horticultural instruction, and have also taken notice of how it has been progressing in the country generally, and without in any way particularising this or that county, we must say that while in some counties splendid work is being done, in others it seems to drag rather heavily along, and I should like very briefly to state why I think this is so. I will consider it under three heads: 1st, The People; 2nd, The Horticultural Lecturer or Instructor; 3rd, The Technical Instruction Committee. I hope to be distinctly understood when I say, that I do not write in any way in any sense of discouragement. Up to the present time we have only been engaged in what we may call pioneer work—clearing the way. Technical instruction is now fully recognised as not the least important branch of education, although much more has necessarily to be done in the way of systematic organisation, before it can be perfected.

THE PEOPLE.

My work has been amongst all sorts and conditions of men—artisans, coal and ironstone miners, agricultural labourers, and others, and as a whole I find it most encouraging. It is taken up most heartily by many of them, very keen interest is shown, and any instruction or advice which is given is greatly valued. In very few places do I find much apathy or indifference, and where such is the case, it is often distinctly traceable to local causes, which perhaps it would not be wise to particularise.

Lecturers have many experiences. In the factory and mining districts, as well as in the suburban districts of large towns, very many take great pride in their gardens, building for themselves little greenhouses, in which Grapes, Tomatos, stove and greenhouse plants, Ferns, and even Orchids are to be seen growing. Here good work can be done. There is no branch of technical instruction so highly appreciated as horticulture. Generally, it represents money well spent, and if in some counties it does not succeed so well as in others, the fault is not with the people—it must be sought for elsewhere.

THE HORTICULTURAL LECTURER OR INSTRUCTOR.

A great deal depends upon the capabilities of this gentleman. He may possess great qualifications as a practical man, but still be incapable of imparting instruction to others. It is necessary that he should not only be a man of sound and wide experience, but also should be fairly well acquainted with at least the elementary principles upon which his practice is based. He is expected to be able to answer most difficult questions, and if unsatisfactory answers are given, confidence is lost, and the work suffers. He should endeavour to gain the goodwill of the people by visiting their gardens and allotments, talking with them, giving advice in a genial and pleasant manner, showing great interest in what they are doing—in fact, his whole heart must be centred in his work, and then he is bound to succeed. A lecturer who rushes to the room just at the time appointed, delivers his lecture, and as soon as it is over, rushes away again, as if glad to have done with it, will never get on. The people do not like this sort of thing.

Amongst the most pleasant of my experiences is the kind and generous support so freely accorded to me by head gardeners. Some walk long distances to be present at my lectures. I am always very grateful for this; it is most encouraging, and seems to help one along so much. The lecturer or instructor can do a very great deal to make the work a success.

THE TECHNICAL INSTRUCTION COMMITTEE.

Well, what shall we say about these gentlemen. We are justly proud of our representatives, they

are most honourable and public-spirited men, but they may not be horticulturists, and there is a good deal in this. They may be good agriculturists, and will do a great deal for the advancement of agriculture, possibly spending much time and money, but gardening is out of their line, they do not understand it. It is a grand thing for horticultural instruction in any county where there are keen horticulturists on the technical instruction committee, then it is bound to go to the front. No

FLORISTS' FLOWERS.

THE SUMMER TREATMENT OF THE HOLLYHOCK.

The treatment of the plant during the summer will depend to a considerable extent upon the weather. The Hollyhock is certainly a gross feeder, and in dry seasons should be copiously supplied with water, and if the ground has been



FIG. 138.—ABNORMAL *LELIA TENEBROSA*, EXPANDED FLOWER AND DIAGRAM.

Sep.=sepals; Pet.=petals; Col.=column.

matter how earnest the people may be, or how able the instructor, unless every possible encouragement is given by the committee, and especially by the organising secretary, the work is bound to be very uphill. Horticulture occupies a unique position, there must be beneath everything a love of the work; and here, I think, we come to the root of the matter. Whether anything can be done we must leave to the future. I think we can generally trace a want of success to this source. But, however, there is a great future for technical horticultural instruction, although much still has to be done in the way of organisation before it can take up its proper position amongst other educational work. Alfred Gault.

well prepared, manure-water may not be necessary, although some manure placed on the surface before beginning to apply water has a good effect. The stems are usually reduced to one, but in the course of the summer side-growths develop from the stem, and a number of flower-buds are produced at the tips, and at the base of the lower growth are leaf-buds. These buds may be cut out with a short length of stem, and if they are planted in sandy soil in small pots, in the manner Vine-eyes are treated, most of them will form plants, and such will flower earlier than the ones produced from cuttings in the spring.

Red-spider is troublesome to Hollyhock-leaves, and will in hot summers undoubtedly ruin the plants

if they are not washed off by daily syringing. Worse than red-spider or any insect-pest is the Hollyhock fungus (*Puccinia malvacearum*). I used to think this pest did most mischief in dry seasons, but my plants had the most virulent attack of it I ever knew one wet season. How is it to be destroyed—this terrible disease? I do not know. I do wish someone who has really managed to conquer this pest would let us know how he did it. I do not fear the Carnation-rust, as it is termed, for by careful attention to cut off diseased leaves as the disease shows itself, it can be eradicated easily enough; but I tried this with the Hollyhock, and must say it was but partially successful, and the Hollyhock plants suffered too much to be of any service the same season. *J. Douglas.*

AUBRIETIA "BEAUTY OF BADEN-BADEN."

We singled out this beautiful variety for illustrating (see fig. 140) from the collection of herbaceous and alpine plants shown by Mr. Pritchard, nurseryman, of Christchurch, at a recent meeting of the Royal Horticultural Society. In size of flower it surpasses all others known to us, and the colour is of a pale lilac shade. As may be inferred from its name, it was sent out by the Wizard of Baden-Baden, Herr Max Leichtlin.

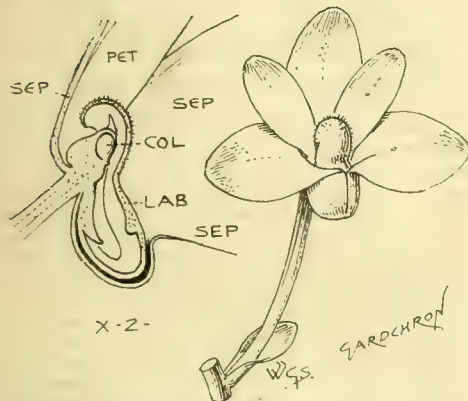


FIG. 139.—*DENDROBIUM THYRSIFLORUM* WITH CONTRACTED LIP, BENT UPWARD OVER THE COLUMN.

(SEE P. 365.)

THE FERNERY.

ADIANTUM CAPILLUS-VENERIS IMBRICATUM.

PROPAGATION is one of the most interesting pursuits in connection with horticulture, and few subjects present such a wide range for study in this particular as do the Ferns. It is remarkable that in many which rarely produce fertile fronds, some other mode of reproduction occurs, and the illustration (fig. 141) shows one of the most curious of these. I have previously referred to *Adiantum capillus-veneris imbricatum* (which until recently I had never known to produce spores), and pointed out that it might be propagated from the tiny bulbils which are produced round the margins of the pinnules. The illustration given is from some pinnules which were taken from fronds having no appearance of spore-cases, and though they were large, well-developed pinnules, the only evidence of bulbils was that the margins were slightly curled. However, after being placed on chopped sphagnum-moss and sand, the first tiny frondlets soon made their appearance, and eventually there was quite a ring round each pinnule. It requires some care to establish the young plants. Too much moisture, on the one hand, may cause premature decay, and on the other, if once allowed to get dry, all hope of success may be abandoned. The pinnules may be taken off and partly

covered with the sand and sphagnum-moss, or the whole frond may be pegged down, and a little sand shaken over the surface. I have also seen young plants established by simply laying the fronds on moist fibre-refuse, in a shady position. It is not all the fronds which will prove prolific. The bulbils occur on the well-matured fronds, which may be beginning to change colour with age. Mr. Druery tells me that "*Daphnitis*" is another variety of capillus-veneris which may also be propagated in the same manner, but I have not done it myself. *A. Hemsley.*

HOME CORRESPONDENCE.

THE WAR AGAINST THE SPARROW.—When I came to Poplar Hall I found that wire had been placed under the eaves to keep the house-martins from building, and yet the last tenants complained bitterly of the number of gnats, &c. I had the



FIG. 140.—*AUBRIETIA* "BEAUTY OF BADEN-BADEN."

wire removed with the hope that the martins might return to their old haunt. The first batch of these migrants arrived at the village about the beginning of May, but none came to my house. But on May 24 I was overjoyed to find that a flock of the second migration were busily engaged in building several nests; so I took a chair to watch, when, to my disgust, I observed several sparrows endeavouring to drive them away. At this I threw dirt at these discourteous birds, and believed that things were going on well, the martins having finished two nests. While looking at one of them, I observed a hen sparrow inside, and the cock ready to buffet the martins. Further examination proved that a second nest was similarly occupied. In vain was the attempt made to drive the robbers out, and although I never permit a gun to be fired on my premises, I felt I should commit a wrong if I allowed my martins to be further dispossessed; so I sent for "a gunner," and although no birds were killed, I trust the sparrows will now leave my martins alone—but of this I am more than doubtful. I may add that as fast as the swallows in my cow-shed lined their nest with

feathers, the sparrow stole them. This must be added to the ill-doings of the (utility) sparrow, a list of which I have already given. In this week's issue, I note a communication from Mr. Joseph Collinson on what I wrote about the sparrow. He is pleased to say that I make "an unreasonable attack on the humanitarians for defending the sparrow." I do nothing of the kind, and it is they who are unreasonable in their thick and thin defence of it; much of what I have read on their side has not been supported by facts. Abuse is not argument, he says; of this I am well aware, having had a considerable amount, and that totally undeserved from his friends—the humanitarians (?). I gave, as I have often given, my reasons for my dislike of the sparrow, and that should be held as argument. I advisedly said, and distinctly meant in its entirety what I said, when I wrote, "those nondescript individuals, the humanitarians," and I repeat it. It is not abuse, it is fact. The humane person is one far apart from these: the first calls him or herself such, and is not; whilst the last is that in all things. I could easily substantiate my assertion by proof, but this is neither the time nor place. Mr. Joseph Collinson refers to statements made by such experienced men as Mr. Joseph Nunn, the well-known Royston farmer (?); and Mr. Joseph Witherspoon, of Chester-le-Street, and others, that "They do not plead for the sparrow on humanitarian grounds, but on those of utility and expediency, and I think that what they say will outweigh anything that Mr. Weir and his friends may be able to produce against the sparrow." Indeed! and here shines forth the

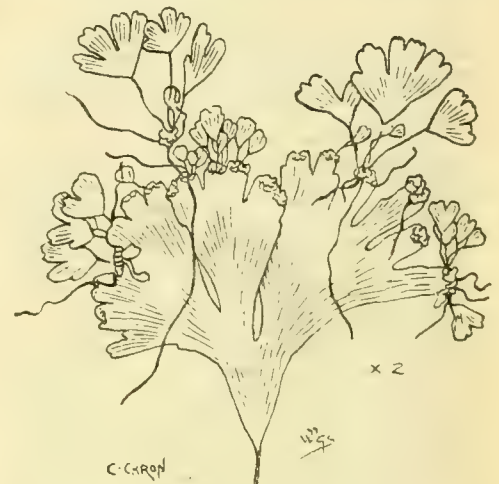


FIG. 141.—*ADIANTUM* WITH PROLIFEROUS FRONDS.

humanitarian, ever ready with his foregone conclusion. What does Mr. Joseph Collinson know of what I or my fellow naturalists know about the sparrow. The evidence of "Meyers, market gardener," is far too vague, and is valueless. The Rev. F. O. Morris compiled a Natural History, and, beyond that, I have not heard him quoted as an authority. I was not aware that Dr. Green, F.Z.S., was, or is, a field naturalist, never having read any of his works, nor those of Dallas, therefore I can neither uphold nor contradict any of the statements so made; but I have the long life testimony of that eminent naturalist my brother, the late John Jenner Weir, F.L.S., F.Z.S., F.E.S., &c., and one who was said by Darwin to be one of the most careful, painstaking, and keen of Nature observers, and with whom, as such, he was in frequent correspondence, and held his opinion as of high value. For seventy odd years my dear brother and myself made the close observation of the life and habits of animals and birds our incessant study. It was my brother's most decided opinion that the harm that the sparrow did far, very far outweighed the little good that could be possibly allotted to it, and with this I entirely agree. As a utility bird, it is on the same lines as one would be who gave me a neck-tie and robbed me of my hat, coat, and waistcoat. To observe any animal or bird properly, it must be done incessantly, year in and year out, and accounting for differences of season, time, place, or locality, and what all the surroundings, and how does his nature, food or habits affect such. This has not been done rightly,

or the sparrow could never have been conscientiously upheld as a utility bird. Mr. W. B. Tegetmeyer's book, *The Avian Robber*, is the nearest and truest approach to it, and Miss Ormerod's evidence is most valuable; both are contradictory to the favourable falsehoods respecting it. As for myself, I look on the sparrow about my premises as a positive curse. He drives away my friends, the summer migrants; he ruins my garden of spring flowers, &c., he robs my chickens of their food, he stops the gutters of my house; and to my certain knowledge, after seventy years close observation, I affirm that he is not of one-tenth the use that has been and is so erroneously attributed to him. Let the humanitarian believe what he will, but it is most unjust, most unfair, and unjustifiable, for him to endeavour to get the legislature to uphold his fads, fallacies, and errors of omission and commission to our detriment. Instead, let them by truthful examples prove incontestably that we are wrong, and that which we absolutely see is not there, and the devastation we know of and feel, does not exist; and that they, holding such views as they do, will seek the aid of the law to enforce them, rightly or wrongly. This is as I see the humanitarian (?). *Harrison Weir, Poplar Hall, Appledore, Kent, P.S.*—Since writing the above, I have been out to "observe" my house-martins, and I now find the sparrows have not only returned and taken possession of nests on the south side, but have also driven off the martins on the north side, and dispossessed them as well. *H. W.*

— I note that on p. 357 of the *Gard. Chron.*, Mr. J. Collinson waxes indignant with Mr. Harrison Weir for his "unreasonable" attack on the defenders of the sparrow, and affirms that they will hold to their opinions in spite of abuse. This may well be the case, since arrays of facts and statistics have been powerless to cure them of their misdirected zeal. To any who possess more than a superficial knowledge of the life-history of the sparrow, the opinions of those who advocate the preservation of this bird are, in spite of Mr. Collinson's protestations, not worth the paper on which they are written. Morris, who is quoted as speaking well of the sparrow, is, although the author of a popular book on birds, by no means considered an authority by practical naturalists, and his conclusions carry little weight when opposed to those of such a celebrated ornithologist as the late Lord Lilford, who, after making the sparrow a special study, condemned it as a pest; but doubtless Mr. Collinson is unaware of the measure of esteem accorded to these two authors by those competent to judge. As to the market-gardener's confession, made before the Committee on Wild Birds Protection nearly twenty years ago, when people, by the way, knew less about the sparrow than they do now, I submit that, although the facts were doubtless as stated, the conclusions drawn from the said facts were erroneous. Blight may have been prevalent when the sparrows disappeared, and may have decreased on their re-appearance; but that these birds were instrumental in effecting this clearance is contrary to all precedent, though the insect-eating birds, whose places the sparrows have usurped in our gardens, might well reduce such a plague if allowed to rear their broods in sufficient numbers. Canon Tristram's baseless assertion, that nothing can excuse the wholesale destruction of sparrows, which concludes the letter, not being a pulpit utterance, might easily be controverted by well-attested facts, which prove such wholesale destruction to be not only advisable but imperative, and I am confident, in spite of Mr. Collinson's belief, that "sensible persons will agree with it," that all those who have carefully and dispassionately considered the pros and cons of the sparrow question, will unhesitatingly disagree with it. *S. W. Fitzherbert, S. Devon.*

THE BIRDS AND THE GARDENER.—The pages of the daily press and gardening journals are filled, at certain seasons, with a good deal of nonsense concerning the usefulness of the birds that infest our gardens, and we have all the pros and cons over and over again that some of us know so well. It is a matter of belief with many persons that some species of birds were designed by the Creator for the special benefit of the British gardener, and that all he has to do is to let them alone, and not annoy them with gun or rattle, scarecrow or wind-mill clappers; or debar them by means of nets and thread from devouring his fruits, tender seedlings, Crocus flowers, &c. Had these writers spent half a lifetime, say thirty years, in gardens surrounded by

aged woods and game coverts, as has the writer of this note, most of them would have become converts to the gun, trap, and rattle, long ago. Indeed they would have been compulsorily converted on purely defensive grounds alone. The quiet early hours of the morning, before the men arrive, are those most sedulously made use of by the birds, for then they have the kitchen and fruit garden to themselves, and good use do they make of their time, but they live in and on the garden the whole day. There are the tomtits and bullfinches to destroy the growing buds of the Gooseberry in the early spring. It is said there is a "worm" in the bud that allures the birds to this act of destruction, but I could never discover that insect. What good act, it may be asked in this connection, have the birds (insect feeders) done in lessening the Gooseberry-sawfly plague. Here the birds have plenty of food for the taking, but not a caterpillar is touched; and the sparrows, both hedge and house, fight shy of them. With the fruit of the Gooseberry, Raspberry, Cherry, and Strawberry, it is quite otherwise; for all the frugivorous birds of the countryside assemble at the feast if the cultivator neglects to put nets over the fruits, as soon as the least trace of colour betokening approaching ripeness is visible. All fruit-eating birds of this country are perforce content with other kinds of food when the various fruits wild and cultivated are over, hence, for the good they perform then do, their lives ought to be protected. The sparrow alone is a detestable nuisance, without a redeeming virtue, and should be exterminated. Which is the bird that will search for, and devour the maggot of the winter-moth of the Apple-tree. What bird eats weevils or their grubs, or the grubs of the daddy longlegs, so destructive of lowly vegetation in some years? or which "goes for" the May bug or cockchafer, the leaf-roller of the Rose and Cherry, or the fat pink-coloured aphides, that is commonly known as "American Blight"; the Turnip-flea, the leaf miner of Celery and Marguerites, the cuckoo spit, the Onion-grub, Cabbage-caterpillar, and many others, equally the foes of the gardener. Our birds are too fastidious as to their menu, and a good all-round feeder does not exist among them. After all it seems to come to this—we must preserve most of our birds for some infinitesimal amount of good that they do, exterminate the sparrow, and depend upon insecticides and netting. *An Old Bird.*

DOUBLE FLOWERED ARABIS (*Arabis albidiflora-plena*).—This plant has been much admired amongst the spring flowers at Belvoir this season, and it will probably soon become a general favourite. When observed at a short distance, it is quite distinct from the single form, and resembles spikes of Lily of the Valley. I noted it as a valuable introduction when it was first shown at the Royal Horticultural Society's meeting two years ago; but, like many other good hardy flowers shown at these meetings, it received no award. This mistake has since been rectified; but, as a gardener said to me a few days ago, "They do some very queer things up there." Many of the hardy flowers shown at the meetings are very deceptive as to their time of flowering and the size they grow to, because they have been grown under glass; this often causes disappointment afterwards, and I consider all hardy plants and shrubs grown and shown in that way ought to have a special label attached giving particulars of the fact. *W. H. Divers, Belvoir Castle Gardens.* [It is a very old garden plant, figured by the elder De Candolle. *ED.*]

BERBERIS STENOPHYLLA.—Large beds of this free-blooming and showy hybrid have been a striking feature at Downside, Leatherhead. On the somewhat dry and chalky slopes it appears to do remarkably well, and lasts in flower for a considerable time. *R. D.*

DECIMAL NOTATION.—I see mentioned in the *Gardeners' Chronicle* a proposal for setting up a decimal coinage. I should think that no practical person with a grain of common sense can think it an improvement to get rid of the duodecimal element in our means of calculation. Only fancy having to pay wages weekly with ten pence to a shilling instead of twelve. Except in the case where the weekly wage happens to be a multiple of six; no part of a week could be paid at all. In fact, in all cases where time is an element of value, a duodecimal factor is necessary. The advocates of decimal coinage ought to show how to make the divisions of time decimal; they ought to make ten

months in the year instead of twelve; ten or five days in the week instead of six; ten hours in the working day instead of twelve. But more than this, I know, from having long used it, that a duodecimal notation is far better than a decimal one, and a multiplication table in dozens and gross is far more simple than one in tens and a hundred, and would be learnt by a child in, at most, half the time, and when learnt is a far more convenient means of calculation. In fact, no reason can be given for using a decimal notation except that savages have usually counted on their ten fingers; and I therefore regard the decimal craze, like the French Revolution itself, as a step backwards into barbarism. *C. W. Strickland, Yorks.*

KALANCHOE FLAMMEA.—Mr. J. Hudson has flowered at Gunnersbury House a batch of this showy plant, raised from seeds sown in February, 1900; and has proved that it can be obtained in flower in a period from twelve to sixteen months from the time of sowing the seeds. There is little preceptible variation in the habit of growth of the plants raised from seeds, and all of them displayed branched corymbs of flowers, all of which are orange-red in colour, some deeper and some paler in tint. It appears to grow remarkably well in a greenhouse or vinery, and it seems likely to become a general favourite. *R. D.*

APPLES.—Can you give me any information as to the cause of Apples going like the enclosed specimen? As you will notice, the flowers die off after fruit is set, and whole branches die back for several feet. Last year Cox's Orange Pippin went in the same way; this year the variety is Bismarck. The soil is stiff loam, with a stony clay under. The trees are on Paradise stock. *J. P. G.* [We are unable to assign any other cause than drying east winds, but there may be other causes. *ED.*]

THE BOLTING OF CABBAGES.—In the issue of the *Gardeners' Chronicle* for June 1, in articles by "A. D." and "Expert" on the bolting or running to seed of Cabbage, some interesting facts are stated, and perhaps it would be interesting to give you some of our local experience. Some thirty years ago there died near Birmingham an old man named Kemp, who grew Cabbage plants and sold them in Birmingham market, and he warranted them earlier than those of other people, and as never liable to bolt. So great was his fame, that people would have no others, albeit that sometimes the quarter-hundred bunch would not be larger than the palm of one's hand, and as to colour, looked like pickling plants. He always sold out, and at his own price, too; the Cabbages were always small, but always the earliest of all. Now, how did he manage it? Well, this was his secret. He never sowed seed till it was old, it was said from six to fourteen years. The old man kept his bags of seed suspended from the ceiling of his bedroom, labelled with date of harvesting and other facts. Now, I have had the earliest Cabbage in our neighbourhood for the last twenty-five years, and I may say that I never sow seed which is less than six years old; and at the present moment I have Enfield Market Cabbage seed under my bed eight years old, which is, therefore, just getting right. Some fifteen to twenty years ago Mr. Watkins, of London, gave me some seed of a sort he called Early Market, and I saw among them what I consider the best type of Cabbage, with white mid-rib continuing to the end of the leaf, habit dwarf and compact. I rogued the entire bed, leaving about nine plants for seed, from which I have ever since grown my early Cabbages. When the seeds of this variety get four to six years old the plants never bolt, and in order to get seed I have to take cuttings immediately when it bolts. The late Mr. Burbery, of Kenilworth, who raised English Wonder Pea, Early Kenilworth, and White-eye Bean, &c., saw this sort, and I gave him some plants. We alternately raised seed from time to time. Last autumn Mr. Watkins, above named, gave me a new variety for trial, which he called Early Feltham. Well, it is the latest and worst Cabbage I have, although it has not bolted. It was given the best position, and probably will be better when the seed is older; but it has no property superior to the old Early Market, which I now call Pope's Early Market. I may add that I always sow my Cabbage seed on July 7, and never remember any of the plants running to seed. The seed is always damped with paraffin, and coated with red-leads, to keep the birds from eating it. After twenty-five years' experience, I am convinced that

probably the whole of the Brassica genus are better when the seed is old, say from five to eleven years, according to the harvest, some years producing small and poor seed. The plants from such seed are dwarfer, the hearts are compacter, and the waste leaves fewer, and they never run when once you sow them at the right time. I should like to add that, the old man Kemp made a very good fortune from his secret and his Cabbage and Cabbage plants. *John Pope, King's Norton.*

DOUBLE BLOSSOM OF APPLE.—A beautiful example of this freak of nature, exactly like your timely illustration in last week's issue, has also occurred on Brixton Hill. The parent tree was retarded in blooming through the shade of another tree, and the double blossom has appeared on a truss with single flowers, one of which has set a fruit. Of course, the stamens and pistil have been turned into petals. *W. Roupell.* [Please do not call it a "freak" of nature simply because we cannot always explain the occurrence. *ED.*]

CYTISUS ANDREANUS.—Among several *Cytisus Andreanus* raised by me, there is a very striking one (of which I send you a piece), of which the colour is very distinct, almost dark orange; it is also very floriferous, and is distinct in having the flowers fully out when very little foliage has appeared. It is also a fortnight earlier than the ordinary variety. I shall be much obliged if you will kindly let me know if you have seen a similar variety before, what you think of this, and whether you think it distinct enough for the Royal Horticultural Society to give it a name [hardly]. The whole plant is very striking, and it is only when you see the two varieties in bloom together, that the great difference is fully realised. The ordinary variety grown in the same situation is not yet in full bloom. *J. F. A.* [Very free flowering; flowers very attractive, but smaller than usual. Commercially it deserves a separate name, botanically it does not. *ED.*]

SOCIETIES.

ROYAL HORTICULTURAL.

JUNE 4.—A meeting of the Committees was held in the Drill Hall, James Street, Westminster, on Tuesday last, within a few days of the opening of the great exhibition in the gardens of the Inner Temple. This fact appeared to have no significance at all, however; not only were the exhibitors not exhausted by the efforts they then made, but they came forth again in such numbers and in so representative a fashion, that once again the Hall proved quite incapable of accommodating the collections entered, and Mr. Wright must have had considerable difficulty in apportioning the space available.

THE FLORAL COMMITTEE sat for a very long time, and had many groups and novelties to inspect. This body judged the best group of the day to be one of Cannas, staged by Messrs. H. CANNELL & SONS, Swanley. It was a glorious show of these beautiful plants, that are rapidly becoming more and more showy by the introduction of varieties with longer and broader petals. A Gold Medal was recommended to this exhibit. There were many other very gay collections of plants and cut flowers, the great majority of which were from the hardy flower garden. This Committee also recommended twelve Awards of Merit to novelties.

There was such a display of *Eremurus* as has never been seen before, and these stately spikes of pretty flowers were the prevailing feature of the exhibition. Messrs. J. VEITCH & SONS had the largest and best cultivated collection, and for this and exhibits of *Streptocarpus*, &c., were awarded a Gold Medal.

THE ORCHID COMMITTEE only recommended three Awards to novelties; but there was a very fine display of Orchids, and, contrary to usual practice, these were arranged on various tables throughout the Hall.

THE FRUIT AND VEGETABLE COMMITTEE had least to do, and there was a poor attendance of members. A trophy arranged by Messrs. SUTTON & SONS, representing the choicest of their varieties of Melons and Tomatoes, was the principal exhibit. Lord SUFFIELD had some fine Strawberries in pots.

Awards of Merit were recommended to Peach Duchess of Cornwall, from Messrs. RIVERS; and to Melon Excelsior, from Mr. MORTIMER.

In the afternoon a LECTURE on "Heredity" was given by Mr. BATESON (see p. 369).

There were 135 new Fellows elected!

Floral Committee.

Present: W. Marshall, Esq., and Messrs. C. T. Drury, H. B. May, R. Dean, G. Reuthe, Jas. Hudson, Robt. Fyfe, C. Dixon, C. J. Salter, Geo. Gordon, Chas. E. Shea, W. P. Thomson, E. H. Jenkins, R. C. Notcutt, O. Thomas, John Jennings, J. Fraser, Ed. Mawley, Rev. F. Page Roberts, E. T. Cook, and Frank Cant.

A group of plants of *Kalanchoe flammea*, and cut flowers with foliage of a great variety of sweet-scented *Pelargoniums*, were shown by LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton (gr. Mr. Jas. Hudson). The *Kalanchoes* were rather dwarfer than those shown by Messrs. VEITCH & SONS at the "Temple" exhibition, but the inflorescences were branched, and the flowers very bright.

Messrs. SUTTON & SONS, Reading, made a first-rate display upon one of the centre tables. At the end was a group of splendidly-grown *Gloxinias* of some of the firm's choice varieties. Duchess of York, purple and white; Duke of York, rosy-crimson, with white margin; several very pretty spotted varieties, Sutton's White, Reading Scarlet, and others were in the group, all the plants of which were strong, and most freely flowered. Next to these was a group of herbaceous *Calceolarias* of many colours, and variously marked and spotted; also a group of double-flowered *Petunias*, including rose, pink, and white varieties; *Saint-paulia ionantha*, and the white variety of this plant; fine tuberous-rooted *Begonias* were also remarked (Silver-gilt Banksian Medal).

Messrs. W. PAUL & SON, Waltham Cross Nurseries, Herts, exhibited trusses of flower from about forty varieties of hardy *Rhododendrons*, which are grown in loam at Loughton, near to Epping Forest. It is evident that the loam of that district at least is quite suitable to the needs of the *Rhododendron* (Silver Banksian Medal).

Messrs. CHAS. BOYLS & CO., Aylestone Park Nurseries, Leicester, exhibited a group of plants of a yellow-flowered *Carnation* named Earl Roberts, a very fine variety, with non-splitting calyx, and very free flowering. It is a tree variety of strong habit, and possesses little perfume. The same firm exhibited a number of varieties of *Carnations* as cut flowers.

Tree *Carnation* Mrs. Devitt is a bright rose-coloured variety, of very slender habit of growth, and a calyx that splits badly. It is a very pretty *Carnation*, however, which was fully shown by the group of plants exhibited by Houson T. Devitt, Esq., Sandles, Datchet, near Windsor.

Two large umbels of *Allium Schuberti*, a rather dull-coloured species, were shown by F. D. GODMAN, Esq., South Godstone (gr. Mr. Moody); and sprays of *Calycanthus floridus* were shown by the Earl of DARNLEY, Cobham Hall, Kent.

Mr. THOS. S. WARE, Ltd., Hale Farm Nurseries, Feltham, exhibited a group of cut flowers, in which varieties of *Iris germanica* were conspicuous and good. Single and double-flowered varieties of *Pyrethrum roseum*, *Ixias*, *Hemerocallis*, *Pentstemon ovatus*, with small pale blue and purple flowers were included with a great variety of other species. Amongst the plants in pots we noticed *Incarvillea Delavayi*, *Lilium Hansonii*, *Primula sikkimensis*, carrying umbels of yellow flowers 1½ foot high; *Lilium rubellum*, *Primula Forbesii*, &c. Amongst the cut specimens we should have included *Ostrowia magnifica*, with large campanulate flowers of palest lilac colour (see illustration in *Gardeners' Chronicle*, July 21, 1898, p. 65); *Nymphaea Mariacea carnea*, Arum Eggeri, &c. (Silver Flora Medal).

Mr. ARTHUR W. WADE, Riverside Nurseries, Colchester, exhibited a group of hardy flowers, in which were good bunches of *Inula glandulosa*, *Papaver orientale*, Prince of Orange, *Incarvillea Delavayi*, *Aquilegia*, *Ranunculuses*, Sweet Peas, *Pyrethrums*, &c. Also a group of Sweet Peas growing in pots, including nineteen varieties, which were flowering freely. There were in addition seven varieties of the "Cupid" section.

An exceedingly showy exhibit was that of cut hardy flowers from Mr. AMOS PERRY, Hardy Plant Farm, Winchmore Hill, London, N. In the centre of the group there were twelve or more fine spikes of *Eremurus robustus*, *E. Elwesianus*, and *E. himalaicus*. The double and single varieties of *Pyrethrum roseum* were grandly shown. *Erigeron saesuginosus*, *E. Fremonti*, *Heuchera sanguinea splendens*, H. x Edge Hall Hybrid of very pale rose colour; *Ixiolirion tartaricum*, with very bright blue flowers; *Oethionema grandiflora*, &c. There were plants of *Aquilegia Stuarti*, the delicate rose-coloured *Oenothera speciosa rosea*, &c. (Silver-gilt Banksian Medal).

Messrs. KELWAY & SONS, Langport Nurseries, Somersetshire, exhibited grand bunches of cut flowers of *Peonies*, of which the following were conspicuous varieties: Duchess of Sutherland, pale rose colour, single; Emily, rich rose colour, also single; Lady Alexander MacDuff, white, double; Annie Askew, single, white with lemon coloured centre; Duchess of Somerset, with rich rose-coloured flowers, semi-doubled; Lady Carrington, white, with very pretty yellow anthers, semi-doubled;

and many others. Of many varieties of *Pyrethrum roseum*, we noticed Evelyn Transcendent, Louis Delessalle, Lady Kildare, Leonard Kelway, all double flowered; also Fairfax, Ascot, James Kelway, Millicent (white, with yellow disc), among the single ones. There were some pretty bunches of flowers of *Aquilegia* (Silver Banksian Medal).

GEORGE YELD, Esq., of Clifton Cottage, York, exhibited a collection of flowers of seedling *Iris*es raised by himself, many of them from *I. pallida* varieties. The flowers were very pretty, but none of them gained an award from the Committee. *Hemerocallis* "Apricot" is a rich yellow coloured variety, raised from a cross between *H. flava* and *H. Middendorffii*, and has been exhibited at the Drill Hall on previous occasions.

Lychnis striata, a Japanese species with curiously striped flowers, was shown by Messrs. G. JACKMAN & SONS, Woking.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea, exhibited a collection of *Eremurus* spikes, including 150 cut specimens, and illustrating *E. himalaicus*, *E. Elwesii*, and *E. robustus*, with several slight variations between the two last named. The strong, tall, upright spikes of flowers were very much admired, but being shown over a groundwork of double *Peonies*, the effect was not so pretty as the group of *Eremurus* from the same exhibitors last year, which was illustrated in a supplement to the *Gardeners' Chronicle*, June 30, 1900. It is a pity that these handsome border plants will not succeed in large towns, for in several good gardens in London they have quickly deteriorated. Messrs. JAS. VEITCH & SONS had also a group of *Streptocarpus*, representing a very beautiful strain, with blue, red, purple, rose, and white flowers, three, five, and seven blooms on a spike. A group of *Kalanchoe flammea* similar to that exhibited at the Temple Show was also from Messrs. VEITCH, who were awarded a Gold Medal for the entire exhibit.

Messrs. W. CURBISH & SON, Highbury, Middlesex, exhibited a collection of about thirty spikes of *Eremurus himalaicus*, rising from a ground of *Spiraeas*, *Carnations*, &c., the effect being very good. *S. astilboides* var. *Queen Wilhelmina* was very effective; and we noticed the fine *Carnation* Sir Hector McDonald, already described in these columns; *Malvastrum lateritium*, double scarlet flowered *Begonia La Fayette*, &c. (Silver Banksian Medal).

Messrs. W. R. NEWPORT & CO., Hillingden Heath, Uxbridge, exhibited a large group of plants of a bedding *Lobelia*, colour purple, with white centre. It is named Newport's Model, and is a very good variety; but we are not sure it is sufficiently distinct from all existing varieties.

Messrs. WALLACE & CO., Kilmfield Gardens, Colchester, exhibited a very interesting exhibit of hardy flowers, in which a very choice collection of *Iris germanica* were represented. Of *Lilies*, we noticed L. Hansonii, L. odorum, suggestive of L. Browni, but with broader foliage, and the flowers much flushed with colour on the exterior of the tube; L. Henryi, L. excelsum, L. longiflorum giganteum, L. Martagon album, the pretty little L. rubellum, and many varieties of L. Thunbergianum. Among a number of *Brodias* was a new one, B. crocea, with yellow flowers, not so showy as some other species; *Eremurus Bungei*, &c. (Silver-gilt Banksian Medal).

Messrs. J. CHEAL & SONS, Lowfield Nurseries, near Crawley, exhibited sprays of ornamental trees and shrubs, including *Rhododendrons*, *Lilacs*, *Weigelas*, &c.; *Quercus foliis purpureis*, and *Q. concordia* (yellow leaved), *Crataegus*, &c.

Messrs. HUGH LOW & CO., Bush Hill Nurseries, Epsfield, again exhibited a group of the very pretty *Schizanthus Wisetonensis*, frequently described in these columns.

Messrs. HUGH LOW & CO. also showed a number of varieties of *Carnation Souvenir de la Malmaison* in yellow, crimson, white, bright red, flesh colour, and other tints, but nothing better in form or sweeter in fragrance than the type.

Messrs. FRANK CANT & CO., Braiswick Nurseries, Colchester, exhibited cut *Roses*, in which some of the garden varieties were seen to good advantage, Paul's Carmine Pillar, Marquise de Salisbury, &c.; also Tea and other varieties (Silver Flora Medal).

Mr. GEO. PRINCE exhibited from Oxford a glorious collection of cut Tea *Roses*, most of which had been cut from the open, being the first cut-of-door *Roses* of such quality exhibited this season. The varieties *Maréchal Niel*, *Catherine Mermet*, *Comtesse de Nadailac*, &c., were grand. Quite as pretty in the ornamental wooden stands were the cut flowering sprays of Red Copper Briar, single yellow Briar, and yellow Banksian.

Messrs. H. CANNELL & SONS, Swanley, Kent, showed a collection of their hybrid *Aquilegias*, showing great variety of colouring and robustness of growth. They were exhibited as cut blooms, cut from plants whose height measured, viz., blue and white, 2 feet; red, yellow, and orange, from 3 to 4 feet (Silver gilt Banksian Medal).

Messrs. CANNELL showed excellently well as a group of plants in pots some of the finest varieties of *Canna indica* that we have observed. The colours of many of the varieties were similar or nearly so. Sam Trelease, a vivid crimson flower with reflexed segments and yellow centre, is a novelty

in colour if not in shape. The height of the plants varied from 2 to 4 feet, but whether the greater height of some of them was due to cultivation or not, we were unable to discover (Gold Medal).

Messrs. J. LAING & SONS, Nurseries, Forest Hill, S.E., showed a considerable group, consisting of *Streptocarpus* in variety, their prize strain of *Gloxinia erecta* in spotted, self-coloured, and margined varieties. There was also shown in the group *Begonia* "Attractive," one of the now old-fashioned type, with pendulous flowers of a pleasing shade of cerise-red, which are double. The group was set off with *Adiantum* and *Isoplexis*.

Mr. MAURICE PRITCHARD, nurseryman, Christchurch, Hants, showed a table of choice things from the border, including *Iris sibirica alba*, some fine telling *I. pallida dalmatica*, of corulean blue colour; *I. Edina*, a neat growing plant, having small flowers of two shades of blue, the falls the darker tint; *I. Mrs. H. Darwin*, white, with falls having purple stripes on them; *Incarvillea Delavayi*, flowers rosy-carmine; *Trollius Fortunei*, with double, orange coloured flowers; *Hyacinthus amethystinus*, a charming small flowered variety; small plants (7 to 12 inches high) of *Olearia stellulata*, very freely bloomed; *Silene maritima flore-pleno*, *Saxifraga baccata*, *Libertia pulchella*, with white blossoms; Winter Moss; *Hieracium villosum*, a plant having woolly leaves, and yellow flowers; Spanish *Iris Chrysolora*, bright yellow; *Eremurus*, *Pyrethrum*, and *Peonies* (Silver Flora Medal).

Messrs. JOHN PEED & SONS, Roupell Park Nurseries, Norwood Road, London, S.E., showed a floor group of *Hydrangea Hortensis*, inclusive of varieties with pink and bluish flowers, also some of *H. paniculata* as back-row plants.

Messrs. J. CARTER & CO., 237, 238, and 97, High Holborn, London, showed plants of *Invincible* Prize *Gloxinia*, erect blooms in all cases, and either selfs, margined, or spotted. The habit is good, the growth strong, and foliage ample and satisfying. This firm likewise showed Sweet Peas as cut flowers, which were much faded from sunheat; and *Petunias*. We noted of the former, *Her Majesty*, vivid crimson; *Venus*, a lovely pinky-cream; *Salopian*, carmine and scarlet; *Gaiety*, rose-carmine striped; *Emily Eckford*, of a beautiful violet tint; *Orange Prince*, orange-salmon wing, and delicate rose standard; *Stanley*, dark velvety purple, &c. (Bronze Flora Medal).

Messrs. BARR & SONS, King Street, Covent Garden, showed hardy herbaceous perennials as cut flowers. Poppies filled a large portion of the allotted space, and there were noted *Papaver Salmon Perfection*, *P. Scarlet Giant*, *P. bracteatum*, and *P. Prince of Orange*, *Pyrethrum roseum Circe*, rose coloured and double; *Hamlet*, rather lighter in colour than the first-named, a single flower with a yellow disc, nice and showy; *P. r. Geo. Wallace*, vivid crimson and single; and *P. r. Mary Kelway*, a carmine-coloured flower. Other species consisted of *Tradescantia virginiana alba grandiflora*, *Allium Erdeli*, *Calochortus pulchellus*, *Trillium Rosy Gem*, *Aquilegia canadensis*, a species with scarlet flowers and yellow anthers. The firm repeated its exhibit of dwarf trees, and showed likewise *Water Lily* flowers in a bowl of water, as well as an extensive collection of *Iris* (Silver Banksian Medal).

Messrs. J. VEITCH & SONS, Royal Exotic Nurseries, Chelsea, exhibited a number of beautifully-flowered hardy shrubs, including *Philadelphus Lemoini* Boule d'Argent, *P. L. Mont Blanc*, *P. L. erectus*, a variety of extreme floriferousness; *Hydrangea Hortensis manchuria*, with pink and with blue heads of flowers; *H. H. Mariessi*, and *H. H. rosea*; *Viburnum macrocephalum*, and *V. tomentosum*, a very floriferous species; a branch of *Chionanthes retusus*, *Styrax obassia*, *Rhododendron hybridum Florence*, deep rose, with a white tube; *R. h. Duchess of Connaught*, white, with dark-coloured blotch on the inferior segment; *Marchioness of Lansdowne*, carmine, with dark purple blotch; *Mrs. E. Gladstone*, and *Mrs. Holford*, rosy-carmine, and others of somewhat similar tints. There were likewise shown cut blooms of *Magnolia Watsoni*, figured in the *Gardeners' Chronicle*, August 18, 1894; *Olearia stellulata*, *Magnolia tripetala*, and *Leucothoe Davisii*.

ANTHONY WATERER, Knap Hill Nursery, Woking, showed trusses of flowers of *Rhododendron hybridum* in choice unnamed seedling varieties; also twenty-four trusses of their "Knap Hill" hardy *Azaleas*, which possess flowers larger than the Ghent strain, and of very attractive colours.

Messrs. PAUL & SON, the Old Nurseries, Cheshunt, had on a table facing the entrance to the Hall, a display of blooms of seedling *Roses*, and species of *Rosa*. We noted *Carmine Pillar*, *R. rugosa atropurpurea*, single, flowers of deep crimson tint; *R. microphylla*, *R. xanthina*, *R. pimpinellifolia*, *R. gymnocarpa*, *R. pulverulenta*, *R. Alberti*, and the new variety, *Lady Battersea*. The firm showed *Rosa polyantha Eugenie Lamesch*, with coppery-yellow coloured flowers; and *R. p. Leonie Lamesch*, with reddish-rose coloured, Camellia-shaped flowers. There were besides, the double-flowered white *Lilac*, *Madame de Chatenay*, a variety having a large, massive, compact spike; the double white *Madame Lemoine*; and *Keria japonica grandiflora plena*.

An exhibit of *Pelargoniums*, representing at least three sections of the flower, was made by Mr. H. B. MAY, Dyson's Lane Nurseries, Edmonton. In displaying these single and double zonals, and the newer varieties of the Ivy-leaved section, the entire side of a table running the full length of the hall was requisitioned, the entire lot making quite a feast of these showy and still exceedingly popular plants; for while novelties come and vanish from sight, this showy group still finds many admirers, and not a few who are really enthusiastic cultivators. In the Ivy-leaved section, besides the better of the older kinds, some novelties were also forthcoming, and two of these are described under "Awards of Merit." In addition to those, *Mrs. J. G. Day*, a crimson-rose of a glowing shade; *Resplendent*, magenta-crimson, with maroon blotches, are scarcely less notable. Then in double and semi-double kinds, *Le Franc*, blood-red, violet shaded; *California*, bright orange, very large semi-double; *Lord Milner*, a scarlet of the true shade, very fine and distinct; *Berthe de Presilly*, silver-rose; *Puvis de Chavannes*, intense scarlet; *Madame Charlotte*, enormous trusses of a mottled salmon shade, are among the best of newer sorts, though *Decorator*, clear true scarlet, immense truss, and *King of Denmark*, salmon, may be counted still as excellent in their way, both good and free, and producing the finest effect in the mass. In the single-flowered varieties, the more noteworthy are *Ada Negri*, flesh and rose, with creamy spots; *J. M. Barrie*, cerise; *Conan Doyle*, salmon-pink; *Iris*, purplish-crimson; *Baronne de Siebach*, deep brilliant red, are all telling flowers, conspicuous for new shades or combined shades of colouring in these plants. Grouped together in batches, the plants made a fine display, the freedom of their own leafage, and the influence of many Ferns interspersed here and there, having an agreeable effect on the group as a whole (Silver-gilt Flora Medal).

Awards.

AWARDS OF MERIT.

Acer pictum (colchicum) aureum.—This is a golden-coloured variety of the species *A. pictum*, frequently known in gardens as *A. colchicum*. From Messrs. T. CRIPPS & SON, Tunbridge Wells.

Canna indica Elizabeth Hoss, is a much reflexed flower of orange colour, spotted with crimson. Shown by Messrs. CANNELL & SONS.

Canna Jean Tissot, is a deep crimson, widely expanded flower. Shown by Messrs. CANNELL & SONS.

Canna Grossherzog Ernst Ludwig von Hessen, is like *Jean Tissot* in colour, but has a larger bloom and truss. Shown by Messrs. CANNELL & SONS.

Canna Oscar Danneberg, orange and yellow, large, erectly poised bloom, and moderate-sized truss. Shown by Messrs. CANNELL & SONS.

Ivy-leaf Pelargonium Leopard.—Rose colour, with carmine blotch on upper petals. Shown by H. B. MAY.

Ivy-leaf Pelargonium Mrs. W. H. Martin.—Rosy-lilac, with carmine stripes on the upper petals. Shown by H. B. MAY.

Lewisia Tweedii, a dwarf-growing plant with strap-shaped foliage, and 1 rosy-pink blossoms. Shown by Messrs. BARR & SONS.

Mecynopsis heterophylla.—This is an annual plant with single flowers, two inches across, colour orange red, with deep brownish maroon coloured centre, and bright yellow anthers. The habit of growth is very slender, and the long flower-stems are twisted curiously until the flower-bud commences to expand. The plant is said to have been raised from seeds sown four months since. From Mr. M. PRITCHARD, Christchurch, Hants.

Peony Elsie Perry.—A tree variety. Flowers very large, semi-double, and of deep crimson colour. From Mr. AMOS PERRY, Winchmore Hill.

Papaver orientale "Mrs. Marsh".—A very striking variety, flowers large, single, and of a bright orange-scarlet colour, splashed with white. Each segment is blotched with black at the base. From Mr. AMOS PERRY.

Rosa rugosa Germanica Conrat Ferdinand Meyer.—This is the name attached to a *Rose* exhibited by LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton (gr., Mr. J. Hudson). It is said to have been raised by Dr. MULLER, and from double crossing has claim to the parentage of *Gloire de Dijon*, *Duc de Rohan*, *Maréchal Niel*, and *Rosa rugosa*. The variety blooms very freely from the old wood, and the growth exhibited had eight expanded flowers besides buds. The blooms as nearly as possible resemble those of *La France* in respect to colour, are very fragrant, and measure nearly four inches across. It is a strong grower, and has good sized leaves. Whether the variety will bloom in the autumn as well as spring has not been proved yet.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the Chair; and Messrs. Jas. O'Brien (Hon. Sec.), De B. Crawshaw, H. M. Pollett, H. Ballantine, J. Douglas, E. Hill, T. Rochford, W. Cobb, H. T. Pitt, W. H. Young, H. J. Chapman, F. A. Rehder, J. W. Potter, H. Little, and H. A. Tracy.

There was a very fine display of Orchids, the great quantity of plants and good quality of *Cattleya Mossiae* being specially noticeable. Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen (gr., Mr. W. H. Young), showed a group, rich in good things, and for which he was awarded a Silver-gilt Flora Medal. Prominent in the centre was a grand plant of *Laelio-Cattleya* × *Wiganiae aurea*, with eight of its fine rose-purple, yellow-tinted flowers; a fine form of *L.-C. × Canhamiana*; some very fine *C. Mendeli* and *C. Mossiae*, including a good *C. M. Reineckiana*, and the handsome *C. M. Mrs. Egerton Grey*, and *C. M. Pride of Ladysmith*. Others remarked were *Laelia majalis*, with three flowers; two *L. Digbyana*, bearing three flowers; good *L. purpurata*, and *L. tenebrosa*; *Scuticaria* [Hadeni], with six flowers; *Aerides Fieldingi*, with branched spike 2½ feet long; *Miltonia vexillaria* *Constance Wigan*, *M. v. alba*, and *M. v. Empress Victoria Augusta*. Also in the group were good *Odontoglossum crispum*, *Epidendrum atro-purpureum*, *E. Medusa*, *Sobralia macrantha alba*, some good *Thunias*, *Cypripedium caudatum*, *Cattleya Warneri*, and *Phalaenopsis speciosa*.

H. T. PITT, Esq., Rosslyn, Stamford Hill (gr., Mr. Thurgood), was awarded a Silver-gilt Flora Medal for an excellent group, in which were some very fine *Odontoglossum crispum*, both spotted and unspotted, which were, however, rendered comparatively insignificant by the presence of the noble *O. crispum* *Pittianum*, which as now seen is the finest blotched *O. crispum* seen so far. The very large flower had broad sepals, coloured dark purple at the back, and with the surface covered on the inner two-thirds with large dark red-brown blotches, the margin being white; the still broader fringed petals had the central area thickly set with dark red-brown blotches, the central group having a broken row of smaller ones with a white line between them; margin and tip white. Lip large; crest yellow, with reddish lines, and with brown spots in front. The plant has already received a First-class Certificate. Also in the group there were noted fine *Laelia purpurata*, *L. tenebrosa*, *L. × Latona*, *L. Digbyana*, *Miltonia vexillaria*, *Odontoglossum citrosum*, *O. × Andersonianum*, *Cattleya Schilleriana*, *Cypripedium × Rosslynianum*, *C. Stonei*, &c.

JEREMIAH COLMAN, Esq., Gatton Park (gr., Mr. W. T. Bound), staged a good group of *Laelia purpurata*, fine varieties of *Odontoglossum crispum*, *O. × Andersonianum*, *Gatton Park variety*; *O. cirrosus*, *O. × Mulus*, *Cattleya Mossiae*, *C. Mendeli*, *Miltonia vexillaria*, scarlet *Masdevallias*, *Vanda tricolor planilabris*; *Oncidium concolor*, &c. (Silver Flora Medal).

A. H. SMEE, Esq., The Grange, Carshalton (gr., Mr. Humphreys), staged a good group of fine varieties of *Cattleya Mossiae* and *C. Mendeli*. Of the former, very fine and distinct were *C. M. Arnoldiana*, *C. M. Hackbridgensis*, *C. M. Lawrenceana*, *C. M. Londinensis*, *C. M. Peetersiana*, and *C. M. Mrs. Smea*, a grand large flower; of the *C. Mendeli*, *C. M. Hackbridgensis* is a charming flower, with richly-coloured lip, and heavy purple feather on the white petals; other distinct ones were *C. M. picta* and *C. M. Perfection*. With them were fine *Laelia purpurata*, *L. × cinnabrosa*, *Cattleya Skinneri* and *C. S. alba*, *C. Schilleriana* *Hackbridgensis*, *Cypripedium Curtisii*, *C. × Enone*, &c. (Silver Flora Medal).

H. F. SIMONDS, Esq., Beckenham (gr., Mr. Geo. Day), staged a good group, in which were some very fine *Laelia purpurata*, *Miltonia vexillaria*, *Cattleya Mendeli*, *C. Mossiae*, *Odontoglossum crispum*, *O. Pescatorei*, *O. nebulosum*, &c., the front being furnished with drooping sprays of yellow *Oncidium concolor* (Silver Flora Medal).

Messrs. JAS. VEITCH & SONS, Ltd., Chelsea, were awarded a Silver Flora Medal for a fine group, containing some very showy hybrids, including several plants of *Laelio-Cattleya* × *Canhamiana*, and one of the variety "alba"; *L.-C. × Aphrodite* and *L.-C. × A. alba*, *L.-C. × Hippolyta*, *Laelia × Latona*, *Cattleya × calumma*, three of the pretty *Spathoglottis* × *aureo-Veillardii*, *Phalaenopsis* × *Mrs. H. J. Veitch*; the pretty and singular *Epi-Cattleya* × *radico-Bowringiana*; *Cypripedium Urania* (to grande × Charlesworthi), and other hybrids. The species were represented by good *Odontoglossums*, *Cattleyas*, *Laelias*, and *Anguloa Clowesii*, *Epidendrum falcatum*, *Angraecum modestum*, &c.

Messrs. HUGH LOW & CO., Bush Hill Park, Enfield, were awarded a Silver Flora Medal for a good group, consisting chiefly of *Cattleya Mossiae*, of which the best was *C. M. ex-celsa*; *Laelia purpurata*, the pretty hybrid *Laelio-Cattleya* × *Herga* (*L.-C. × elegans* *Turneri* × *C. Gaskelliana*), *Dendrobium Lowianum*, *D. Falconeri*, and *D. F. Ilacina*.

Messrs. STANLEY, ASHTON & CO., Southgate, had a splendid group of their fine strain of *Cattleya Mossiae*, several of the plants bearing forty to fifty flowers. Of the named varieties *C. M. Mrs. F. W. Ashton*, a fine white variety; and *C. M. Alice Nugent*, a noble large flowered dark coloured form, were the best. With them were some very fine *Laelia purpurata* (Silver Flora Medal).

Messrs. B. S. WILLIAMS & SON, Holloway, had a good group made up of *Cattleya Mossiae*, *C. Mendeli*, *Laelia purpurata*, *Odontoglossum crispum*, *O. luteo-purpureum*, *Trichopilia*

crispa, *Platylinis latifolia*, *Oncidium Marshallianum*, *O. sarcodes*, *Thunia Marshalliana*, *T. Wrigleyana*, *Dendrobium calceolus*, and *Cypripedium exul* (Silver Banksian Medal).

P. W. HOOLEY, Esq., Bitterne Park, Southampton, showed the fine natural hybrid *Lælio-Cattleya* × *Gottoiana*.

Mr. JOHN CROOK, Forde Abbey Gardens, Chard, sent some fine spikes of *Vanda teres*, grown in a Cucumber-house.

THOS. BAXTER, Esq., Oakfield, Morecambe (gr., Mr. R. Roberts), showed the fine *Odontoglossum* × *lochrichtiense* "Lord Milner," the large white *O. crispum* Morecambe, and the pretty white *O. c. Emily*.

R. I. MEASURES, Esq., Camberwell (gr., Mr. H. J. Chapman), showed *Miltonia vexillaria*, Cambridge Lodge variety, in which the abnormal character called trilabellia is markedly exhibited, and in addition the sepals also bear markings in some degree like those on the lip.

DE B. CRAWSHAY, Esq., Rosefield, Sevenoaks (gr., Mr. Stables), showed *Odontoglossum crispum* Rosefieldense, a well-formed white flower with dark purple spotting.

HENRY LITTLE, Esq., The Barons, Twickenham (gr., Mr. Howard), sent *Lælia purpurata* rosea and *L. p.* "Barons-halt," two very fine dark-coloured varieties.

The Hon. WALTER ROTHSCHILD, Tring Park, showed *Lælia* × *purpurato-cinnabarina*, with reddish-orange sepals and petals, and dark purple lip; and *L. cinnabarosa*.

GURNEY WILSON, Esq., Mayfield, Streatham Hill, showed a good *Lælia* × *cinnabarosa*.

Awards.

AWARDS OF MERIT.

Odontoglossum crispum punctatum "Roslyn variety," from H. T. PITT, Esq., Roslyn, Stamford Hill (gr., Mr. Thurgood). Flower fine in shape and substance; white, tinged with rose, and prettily marked with small rose-purple spots.

Odontoglossum × *lochrichtiense* "Lord Milner," from THOS. BAXTER, Esq., Oakfield, Morecambe (gr., Mr. R. Roberts). A large and broad-petalled form. Sepals and petals cream-white, tinged with bright yellow towards the margins and tips, and heavily blotched with brown. Lip large, and with the large shield-shaped, chestnut-coloured blotch seen in most *O. triumphans*; crest, yellow margin, crimped, white.

Cattleya Mossie "Mrs. F. W. Ashton," from Messrs. STANLEY, ASHTON & Co., Southgate.—A finely-formed, large white flower with light yellow disc to the lip, in the front of which is a pale pink blotch.

CULTURAL COMMENDATION.

To Mr. T. Blackmore, gr. to R. HAY MURRAY, Esq., Springfield, Great Marlow, for a wonderful specimen of *Dendrobium thyrsiflorum*, carrying a large number of flower-spikes.

Fruit and Vegetable Committee.

Present: A. H. PEARSON, Esq. (in the Chair); and Messrs. Jos. Cheal, W. Bates, S. Mortimer, Alex. Dean, James H. Veitch, J. Willard, G. Norman, G. T. Miles, and Rev. W. Wilks.

From Lord SUFFIELD's garden, Gunton Park, Norwich (gr., Mr. W. Allan), was exhibited a group of fruiting Strawberries in pots. The variety was Lady Suffield, a fruit of a very deep colour, and having rather prominent seeds. The plants bore an excellent crop of fruits, and a dish of fruits of the same variety was shown also (Silver Banksian Medal).

Melons were shown well by Mr. S. MORTIMER, Rowledge Nursery, Farnham. He had fifteen fruits of seedling varieties. One of these was recommended an Award of Merit (Silver Banksian Medal).

Messrs. SUTTON & SONS, Reading, arranged a kind of Trophy, in which was effectively displayed a collection of choice varieties of Melons and Tomatoes. Of Melons there were excellent fruits of Triumph, Ringleader, A1, Royal Jubilee, Windsor Castle, No Plus Ultra, &c.; and of Tomatoes, Golden Perfection, Best-of-All, Peerless, Dessert, Sunbeam (yellow), A1, Tender-and-True, &c. Messrs. Sutton had also some growing Peas in pots, of the following varieties, Green Gem, Nonpareil, A1, &c. (Silver Knightian Medal).

LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton (gr., Mr. J. Hudson), showed a box of three dozen fruits of Jefferson Plum; very choice indeed were these, and a Silver Banksian Medal was recommended.

Strawberry Royal Sovereign was shown by two exhibitors. Some fruits came from the Earl of DARNLEY, Cobham Hall, Kent; these were very highly coloured, and of moderate size (Vote of Thanks). Larger fruits, of less intense colour, came from J. S. BUCKNALL, Esq., Langley Court, Beckenham, who showed a much larger collection (Silver Banksian Medal).

Awards.

AWARDS OF MERIT.

Melon Excelsior.—The fruits exhibited were of small size, yellow exterior, and possessed salmon-coloured flesh. The flavour was thought sufficiently good to warrant an award being given, but as the one fruit that was cut was consumed before this note was taken, we can say nothing as to this. From Mr. S. MORTIMER.

Peach Duchess of Cornwall.—Fruits of moderate size, skin cream-coloured, with red stripes. Flavour described as excellent. From Messrs. T. RIVERS & SON, Sawbridgeworth.

ROYAL NATIONAL TULIP.

(SOUTHERN SECTION).

MAY 23.—The annual show of the above Society was held on the above date by the invitation of the Birmingham Botanical and Horticultural Society, in their exhibition-room at the Botanic Gardens, Edgbaston; and despite the very remarkable season we have been passing through, brought together a very good show of bloom.

Perhaps the most welcome feature of the exhibition was the number of new names among the exhibitors. The seed that was sown some years ago by the revival of the southern show has begun to fructify, and new cultivators of the Tulip are rising up to replace the old fanciers, whose ranks are being thinned year by year. On this occasion, exhibitors came from districts so widely separated as Cambridge and Dublin on the one hand, and York and Kent on the other; and though the Midlands themselves were but slightly represented, it may be hoped that the show will induce some of the many good florists Birmingham possesses to take up a fancy which is eminently suited to the suburban amateur.

The Edgbaston Gardens are always a pleasant place in which to hold a show, and the show blooms looked very attractive ranged along one side of the exhibition hall. On the other side, Messrs. BARR & SONS, London, had a fine display of both florists' and decorative Tulips; among the florists' Tulips being some exceptionally good blooms.

MESSRS. POPE, of King's Norton, had also an extremely attractive exhibit of Tulip species.

MISS WILLMOTT presented a handsome Silver-basket as the leading prize, and this went to the stand of twelve exhibited by Mr. C. W. NEEDHAM; but though missing this prize, the honours of the meeting rested with Mr. J. W. BENTLEY, who was either 1st or 2nd in every class, and took the Silver Medal presented by the Birmingham Society. In the smaller growers' classes, Mr. G. EYRE put up a very good six. Miss SCOTT's blooms were also good in a way; while in the pairs Mr. BULL showed an excellent example of Elizabeth Pegg, feathered.

Taking the show as a whole, flamed bizarres were good, the class being practically occupied by Samuel Barlow, Sir Joseph Paxton, and Dr. Hardy. Feathered bizarres were weaker than usual, though the Garibaldi to which the premium went was a beautiful flower; and among Messrs. BARR's exhibit were some glorious blooms of Geo. Hayward, feathered, not often seen in such condition nowadays. Flamed byblemens were extremely good, Chancellor and Talisman being the leading flowers. Feathered byblemens were also an exceptional class, Talisman, Bessie, and Elizabeth Pegg being the best. Flamed roses were weaker than usual; the Lady C. Gordon, which was placed 1st in the class, was quite uncount, as it had heavy yellow streaks in the base. Feathered roses were the really weak class of the show. Breeders were well shown, but as shape is everything with a breeder, the heat of the exhibition house told heavily against the fully-grown flowers, and only young blooms could win.

Novelties were not numerous, though Mr. BENTLEY had some seedling breeders and a byblumen named Jack, beautifully feathered, though faulty in shape.

During the afternoon, and again in the evening, conferences were held in the lecture hall adjoining, and papers were read on various points connected with the show Tulip by the Rev. F. D. HORNER, and other members of the Society.

The Rev. F. D. HORNER and Mr. B. SIMONET acted as judges for most of the classes.

List of Awards.

Class A. Twelve dissimilar rectified Tulips.—1st, C. W. NEEDHAM, Hale, Altrincham, with bizarres, S. Barlow and Sir J. Paxton, flamed; Sir J. Paxton and Magnum Bonum, feathered; byblemens, Talisman and John Hart, flamed; Talisman and Mrs. Hepworth, feathered; roses, Mabel and Annie McGregor, flamed; Andromeda and Count, feathered. 2nd, J. W. BENTLEY, Stakehill, Castleton, Manchester, with bizarres, S. Barlow, Sir J. Paxton, Garibaldi, Masterpiece; byblemens, Talisman, Chancellor, Bessie, Elizabeth Pegg; roses, Annie McGregor, Aglaia, Mrs. Collier, Count. 3rd, A. CHATER, Cambridge; 4th, A. J. HALL, Wye, Kent; 5th, Hon. A. H. T. DE MONTMORENCY, Carrickmines, co. Dublin.

Class B. Six dissimilar rectified Tulips.—1st, J. W. BENTLEY, with bizarres, S. Barlow and J. Moody; byblemens, Talisman and Bessie; roses, Mabel and Jane. 2nd, A. D. HALL, with bizarres, S. Barlow and W. Wilson; byblemens, Talisman and Elizabeth Pegg; roses, Mabel and Annie McGregor. 3rd, C. W. NEEDHAM; 4th, A. CHATER; 5th, A. H. T. DE MONTMORENCY.

Class D. Three feathered Tulips.—1st, J. W. BENTLEY, with Lord F. Cavendish, Bessie, and Mabel; 2nd, C. W. NEEDHAM; 3rd, A. J. HALL; 4th, G. EYRE, Ripley, Derby.

Class E. Three flamed Tulips, 1st, A. D. HALL, with S. Barlow, Chancellor, and Annie McGregor; 2nd, J. W. BENTLEY; 3rd, C. W. NEEDHAM; 4th, G. EYRE; 5th, A. CHATER.

Class H. The "Samuel Barlow" Prize for the best pair of rectified Tulips, 1st, C. W. NEEDHAM, with Sir J. Paxton and R. Yates; 2nd, J. W. BENTLEY; 3rd, G. EYRE; 4th, A. D. HALL; 5th, W. C. BULL, Ramsgate.

Class C. Six dissimilar Tulips, not open to competitors in Classes A. and B.: 1st, G. EYRE, Ripley, Derby, with bizarres S. Barlow and W. Annibal; byblumen, Duchess of Sutherland and Trip to Stockport; roses, unknown, and Miss Nightingale. 2nd, Miss SCOTT, Malabar House, St. Albans, with bizarres Ajax and Masterpiece; byblumen Talisman and Nellie Hughes; roses, Mabel and Count. 3rd, J. PERCIVAL, Wye, Kent; 4th, T. B. WHYTEHEAD, Aconite House, York; 5th, W. C. BULL, Ramsgate.

Class H. A. Maiden growers' prize for two rectified Tulips, 1st, W. C. BULL with Talisman and Elizabeth Pegg; 2nd, T. B. WHYTEHEAD with Mabel and Industry; 3rd, A. H. T. DE MONTMORENCY with Ajax and Annie McGregor.

Flamed Bizarres.—1st, C. W. NEEDHAM, with Sir J. Paxton; 2nd, J. W. BENTLEY, with S. Barlow; 3rd, A. D. HALL, with Sir J. Paxton; 4th, J. W. BENTLEY, with Dr. Hardy; 5th, G. EYRE, with Masterpiece.

Flamed Byblemens.—1st to 4th, to J. W. BENTLEY, with Talisman, Chancellor, Adonis, and Talisman; 5th, to C. W. NEEDHAM, with Pegg's Seedling.

Flamed Roses.—1st and 2nd, to G. EYRE, with Lady Catherine Gordon and Aglaia; 3rd and 4th, to J. W. BENTLEY, with Minerva and Annie McGregor; 5th, to C. W. NEEDHAM, with Mabel.

Bizarre Breeders.—1st to 5th, to J. W. BENTLEY, with Sir J. Paxton, Sir J. Paxton, Hepunth's Seedling, Alfred Lloyd, and Lloyd's Seedling.

Byblumen Breeders.—1st to 3rd, to C. W. NEEDHAM, with Talisman, Bridesmaid, and Alice Grey; 4th and 5th, to J. W. BENTLEY, with Talisman and Seedling.

Rose Breeders.—1st, A. D. HALL, with Mrs. Barlow; 2nd, C. W. NEEDHAM, with Lady Grosvenor; 3rd, G. EYRE, with Rose Hill; 4th, C. W. NEEDHAM, with Lord Derby; 5th, A. D. HALL, with Loveliness.

Class F. Six Breeder Tulips.—1st, J. W. BENTLEY, with bizarres, Alfred Lloyd and Goldfinder; byblumen, Bridesmaid and Thurston's 213; roses, Mrs. Barlow and Hepworth's 9/64. 2nd, A. D. HALL, with bizarres, Sir J. Paxton and Goldfinder; byblumen, Adonis and Elizabeth Pegg; roses, Mrs. Barlow and Annie McGregor. 3rd, C. W. NEEDHAM; 4th, A. CHATER; 5th, T. B. WHYTEHEAD.

Class G. Six Breeder Tulips.—1st, A. D. HALL, with Sir J. Paxton, Ashmole's 126, and Annie McGregor; 2nd, J. W. BENTLEY, with Goldfinder, Thurston's 213, and Annie McGregor; 3rd, C. W. NEEDHAM; 4th, G. EYRE; 5th, Miss SCOTT.

SINGLE BLOOMS.

Feathered bizarres.—1st to 5th to J. W. BENTLEY with Masterpiece, Sir J. Paxton, Lord F. Cavendish, and T. Leech.

Feathered Roses.—1st to 5th to J. W. BENTLEY with Jane, Sarah Headley, Andromeda, and Miss Nightingale.

Feathered byblemens.—1st to 3rd to J. W. BENTLEY with Bessie, Mrs. Jackson, and Bessie. 3rd to 4th to C. W. NEEDHAM with W. Parkinson and Adonis.

SOCIÉTÉ NATIONALE D'HORTICULTURE DE FRANCE.

PARIS.—The six days' exhibition of the Société Nationale d'Horticulture de France, held in the Tuileries Gardens, and closed on Monday last, corresponds to our Temple Flower Show, but it was on a bigger scale, and had more of an "official" character. It was opened, for instance, with all the ceremonial *clat*, for which the French are so justly celebrated, by Monsieur LOUBET, the President of the French Republic, with his official *entourage*, and this fact alone at once placed the exhibition in the category of a fashionable diversion from which no society person would absent himself or herself. This is good for horticulture, and extremely good business for the financial side of the Société, which, after all, is a very important element in the matter. By common consent, the Exhibition of 1901 is admitted to have been one of the most successful in the annals of the Society, and that is saying much, for in arrangements of such exhibitions the French are unrivalled.

One of the chief features of all such exhibitions in or near Paris centres is the display of the old-established house of MM. VILMORIN ANDRIEU ET C^{ie}, who are among the most extensive seed-growers in the world, and whose name is a guarantee of enterprise and excellence. Their exhibits this year in the Jardin des Tuileries are eight in number, notably the fine collection of hardy annuals in flower, and a magnificent circle under the title of "Disposition d'un massif," consisting of hardy herbaceous plants, for both of which they received gold medals; the most interesting plants in these displays included some very graceful and effective grasses, e.g., *Agrostis algeriensis* and *Lagurus ovatus*, and such comparatively uncommon herbaceous plants as *Lazia elegans*, *Brachycome iberidifolia rosea*, variegated forms of *Schizanthus Grahami* and *Schizanthus pinnatus*—the last named a striking form with bluish-white and deep maroon-coloured flowers; and Poppies of all forms and colours. The same firm's collections of *Petunias*, *Cinerarias*, *Calceolarias*, and particularly their beautiful display of *Cannas*, excited widespread admiration. MM. VILMORIN, ANDRIEU ET C^{ie}, carried off the chief prize—a gold medal—for their very fine exhibit of "jeunes plantes issues de semis, cultivées en vue des cultures coloniales,"—a section in which there were six competitors, in addition to a display staged by the pharmacy school of the Muséum d'histoire Naturelle, which was *hors concours*, but which received the special thanks and congratulations of the jury. In the way of other more or less imposing displays, special mention must be made of the collection of plants "vivaces et bulbeuses" of M. THIÉBAUT-LEGENDE, the seed merchant of Avenue Victoria, Paris, to whose fine bed was awarded a gold medal, and whose display included highly interesting specimen plants of *Saxifraga pyramidalis*, with long spikes of white flowers, *Spirea Aruncus*, with its long feathery spikes of inflorescence, and *Heuchera brizoides*, with pinkish-white flowers, a hybrid of great vigor of habit, and extremely floriferous. The *Gloxinias* and *Begonias* of MM. VALLEBANT-FRÉRES, of Taverny, were awarded two medals. In a general way only can be mentioned the extensive exhibits of MM. CROUX ET FILS, of Val-d'Aulnay, who sent some really

remarkable Rhododendrons; M. AUGUSTE NONIN, Chatillon-sous-Ragneux, bedding-out Pelargoniums; A. POIERIER ET FILS, Versailles, three exhibits of the same type; DUVAL ET FILS of Versailles, a very fine display of stove and greenhouse foliage and flowering plants, for which they have a wide reputation—they received the special prize given by Dr. ANDRÉ for the best collection of "plantes des serres."

The ORCHID exhibits were especially interesting, and seem indeed to have attracted more of what is generally called "popular" attention than any other feature of the exhibition. Orchids, indeed, are always fascinating to the *koi polloi*, and at last week's exhibition they received an unexpected surprise in being awarded the *grand prix d'honneur* offered by the President of the Republic—M. MARON receiving the coveted distinction for his new hybrid Orchids—*Laelio-Cattleya* Mme. Wallet (*Laelia purpurata* × *Cattleya Mossie*) and *Laelio-Cattleya* Mme. Debut (*Laelia elegans* × *Cattleya Hardyana*), the golden yellow throat of the former, and the saffron-colored throat of the latter, are very remarkable; doubtless full technical descriptions with illustrations will be published in due course. M. DALLEMAGNE, of Rambouillet, staged some well-grown specimens, among which *Odontoglossum* and *Miltonias* seemed to predominate, and which received a gold medal. The exhibit of M. DUVAL ET FILS in the same *concours*, also received a medal, and included a glorious specimen plant of *Laelia purpurata*. Medals were also awarded to many other exhibitors, notably to M. REINEIX, of Fontenay-sous-Bois, for "le plus beau lot" of Phalaenopsis, Vanda, and *Elides*; in the competition for the gold medal offered for the most beautiful collection of fifty exotic Orchids in flower, the result was a tie (*ex æquo*) between M. BERANECK and M. LESVER. Two gold medals were offered for the best collection of 100 exotic Orchids in flower, and were awarded to M. DRIGER and M. BERT, the display of the latter included a fine specimen of *Dendrobium thyrsiflorum* with huge raceme-like branches of flowers, and a pan of *Odontoglossum citrosomum* with six long branches of flowers.

A special effort was apparently made to have a big display of ROSES, which are always attractive to those who visit flower shows. The big tent filled entirely by MM. H. DEFRESNE ET FILS, Vitry, was a very great success, the centre of the large bed being formed by some fine specimen plants of Turner's Crimson Rambler. There were of course many other exhibits of ROSES, plants, and cut flowers; there were in fact over fifty medals awarded to various exhibits of ROSES, so that some idea may be gathered as to the importance which the French Society attaches to this very important branch of horticultural industry.

NEW PLANTS.—From a purely English point of view, perhaps the new plants formed one of the most interesting features. There were several of importance, but some have been already described in the horticultural Press. M. EMILE THIÉBAUT received two silver medals in this section, one for a new hybrid *Gazania* "Cyclope," which is less ornamental perhaps than distinct and interesting; and also one for *Iris Lorteti* from Mount Lebanon, which is a distinct acquisition. The same exhibitor received a silver medal for *Phlox Comtesse de Jarnac*, as well as a gold medal for a collection of Darwin Tulips in sixty varieties.

The two new *Spiræas*, *Reine de Hollande* and *Washington*, exhibited by MM. LÉVELLER FILS ET C^{ie}, of Caen, agents for the house of VAN WAVEREN & KRUIJFF, of Sassenheim, Holland, were awarded a bronze medal. These varieties were seen at the Temple Flower Show of last year, when they were awarded a Silver Banksian Medal. They do not seem to have made very much progress in this country, but they are distinctly beautiful varieties, and of the highest possible value for forcing purposes: of the two, the *Reine de Hollande* will probably become the more popular; it flowers more freely and throws up a greater number of flower spikes than *S. Washington*. A silver medal was awarded to M. A. TRUFFAUT for *Muscicapula* var. *sanguinea*, which was introduced last year from the French Congo, and which is likely to become a popular plant in sub-tropical gardening; whilst Messrs. HUGH LOW & CO., of Clapton, the only English exhibitors, received a silver medal for two plants of *Schizanthus Wisetonensis*. For the best collection of twenty-five plants, "lignesuses, fleuries ou à feuillage," rare or recently introduced, a silver-gilt medal was awarded to M. MOSER.

Apart from, and in addition to the prizes offered by the Société Nationale d'Horticulture de France, a number of honorary prizes, offered independently of the Society, were awarded by a special jury. Reference has already been made to M. MARON's success in obtaining the grand prize given by the President of the Republic. The second of these two grand prizes was an object of art offered by the Minister of Instruction publique et des Beaux-Arts, and no difficulty appears to have been experienced in awarding this to MM. VILMORIN-ANDRIEU for "plantes annuelles et légumes;" this firm was also successful in taking the prize offered by the Colonial Minister for the best exhibit of colonial plants. The Minister of Agriculture gave two prizes, one for fruit trees carrying fruit and another for Rhododendrons—the former went to M. PARENT, and the latter to M. MOSER. Two special prizes were offered for collections of ROSES, one by the Département de la Seine, which M. MARCOTTE secured, and the other by M. LÉON DUMESNIL, which was secured by MM. LÉVÊQUE ET FILS. Can anyone imagine any of our Cabinet Ministers—with one possible exception—offering special prizes at the Temple Show?

Of the many other features of this great exhibition in the Jardin des Tuileries, perhaps the most striking one was the attention and space devoted to colonial matters. This innovation has excited much favourable comment in the *Parisian Press*. The French may, or may not be good at

colonising, their efforts up to the present have certainly been costly experiments—but it seems that a new era is being inaugurated, and it will have the hearty good wishes of all those who are cognisant of the good qualities of the French people. W. Roberts.

CROYDON AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT.

THE usual meeting was held in the Society's room at the Sunflower Temperance Hotel, Croydon, on Tuesday evening last. Mr. W. J. Simpson occupied the chair, and there was a good attendance of members.

The Secretary, Mr. J. Gregory, gave an interesting discourse on Aquatic Plants, dealing principally with the newer varieties of Nymphaeas and their cultivation in tanks, tubs, &c. The lecturer at the commencement treated of the preparation and formation of lakes, tanks, tubs, &c.; the planting and after-management of the plants, giving a list of the finer and more useful species and varieties for various purposes. Attention was called to the enemies of aquatic plants, such as the rat and vole, coarse and rank weeds, and conferva. The lecture was illustrated with a series of photographs.

Messrs. J. Peed & Son exhibited a collection of named Pyrethrums, and a beautiful collection of alpine plants on a rockery.

The next meeting will be held on June 18; the subject of the lecture on that occasion being "Vegetables for Exhibition, &c."

Obituary.

MARCUS BRUMWELL.—Mr. Marcus Brumwell, of the Hillsborne Nurseries, Broadstone, met with a fatal accident on Wednesday evening of last week. It appears that on that day Mr. Brumwell visited Bournemouth in connection with the floral fête, and on the return journey the pony bolted at Castle Hill, Parkstone, with the result that Mr. Brumwell was thrown from the trap and fractured his skull. Mr. Brumwell was 27 years of age, and had only been married about twelve months. At the time of the accident Mrs. Brumwell was in the Isle of Wight.

ANSWERS TO CORRESPONDENTS.

A CORRECTION.—The plant named for our correspondent, "*S. P.*," in last week's issue as *Syringa chinensis* should have been called *S. Josikea*.

A COUGHING PLANT: M. J. W. A story that might be told to the Maries, if it were worth the while.

DATE PALMS: T. M. We refer you to a very interesting book by Dr. Bonavia on *The Future of the Date Palm in India*. It is to be had from Thacker, Spink & Co., of Calcutta, at a low price.

DOUBLE APPLE BLOSSOM: Chas. Dennis. Very similar to the specimen figured on p. 360 in our last issue.

FOLIAGE OF MUSCAT: J. W. The scalding is due to bright sun and cold wind; probably also to deficient ventilation and moisture.

GLADIOLUS: G. F. H. Kindly send a fresh flower-spike and leaf for identification; former materials insufficient.

GOOSEBERRY FRUIT AND LEAVES: G. W., Dublin. Gooseberry-rust, *Ænidium grossulariae*, figured in the *Gardeners' Chronicle*, March 24, 1891. Cut off and burn all affected parts, and dress the bushes with a fungicide.

MOUNTAIN ASH-SHOOTS DYING BACK: T. B. The injuries are probably due to frost acting on immature wood, which itself was due to late spring planting.

MUSHROOM SPAWN: H. W. French spawn may be spoiled by the mycelium "running" in it before it is placed in the bed. But that can always be ascertained on examination. We think that the failure of the bed is due to this cause.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—G. M. *Pyrus lobata*, frequently called *Mespilus Smithii*.—W. H. *Odontoglossum* × *Andersonianum*, a very large and good variety.—*Cumbrian Cynosurus cristatus*.—W. C., Bath. *Hieracium*

pinnosum.—G. Abbey. Please never to address the Editor when you mean the Publisher, and vice versa. Please also never to mix on the same sheet matter addressed to both departments. Each department is quite separate from the other. 1. *Pyrus torminalis*; 2. *Rhamnus frangula*; 3. *Populus tremula*.—R. N. H. *Asclepias curassavica*, poisonous; *Dendrobium chrysanthum*.—*Rusticus*. *Piptanthus nepalensis*, commonly called evergreen Laburnum.—J. R., Aylesbury. 1. *Brassica verrucosa*; 2. *Epidendrum alatum*.—Rev. T. M. B. P. *Cymbidium tigrinum*, a very fine and distinct form of it, probably naturally a stronger grower than the ordinary form.—G. S. & Co. *Aristotelia Macqui*.—T. W. R. 1 and 2, *Magnolia "Alexandra"*, a cross between *obovata* × *Soulangeana*; 3 and 4, *Acer pseudo-platanus*, golden var.; *Juniperus virginiana*, var. *Schottii*; 1, *Juniperus virginiana*, var. *Chamberlainii*; 2, *Juniperus virginiana* var. *Juniper*. No. 4 is *J. excelsa*.—J. H. J. *Hyoscyamus niger* (Henbane).—R. T. 1, *Pernettya mucronata* variety; 2, *Taxodium distichum*.—C. A. B. Irises next week; 3, *Agrostemma coronaria*; 4, cannot be named in absence of flowers; 5, *Peperomia resediflora*; 6, *Rivina humilis*.—A Subscriber, *Workop*. *Cytisus racemosus*.—J. An Abutilon, probably *A. Savitzii*, but the specimen is insufficient for determination.—F. E. H., Ealing. *Berberis Darwinii*.

NEWLY PAINTING A VINERY: J. You had better defer the work till the winter. The Vines might be injured by the fumes of turpentine and dryers in the paint.

PEAR: J. The injury is due to a caterpillar, which is destroying the interior of the fruits. Collect all such fruits and burn them.

PEAR ARCADE AT TRELISICK. By an oversight this was mentioned in our last issue as a Rose arcade.

PEA ST. DUTHUS: Eighty-one. The raiser of this variety was Mr. Holmes, Tain, Ross-shire.

SOUVENIR DE LA MALMAISON CARNATION "PRINCESS MAY" DYING OFF: Jas. W. The plants were insufficiently rooted when severed from the parent plants; and owing probably to an excess of water at the earlier stages, they lost the few roots they possessed, with the result that the plants died from the roots upwards. It may be a variety which requires a longer period to make roots as layers.

STEPHANOTIS FRUITING: R. Farley. The *Stephanotis* does not commonly bear fruit in this country, but there have numerous instances come to our knowledge, and the fruit has been figured in the *Gardeners' Chronicle*, December 26, 1885. Probably the plants would fruit very much more often than they do if the flowers were less valued for cutting. The fruits are not edible, and as the species belong to a poisonous group, they may also be poisonous.

TOMATOS DISEASED: M. H. S. The disease which has attacked your plants is, probably, the so-called "sleepy disease," for which there is no known cure. Turn out the plants and burn them, and bake or deeply bury the soil, and obtain fresh plants and soil from new sources.

TULIP-BULB AXILLARY TO LEAF: M. J. W. As a bulb is but a bud, there is nothing surprising in its position on the stem, though it is unusual. Probably it results from some injury, as by the puncture of an insect causing hypertrophy. Aucubas, when injured by frost, or other cause, die, as your specimens have done. We see no fungus.

VINE LEAVES: J. The "crystal-like specks" upon the leaves are bladders of water, and are not injurious to the Vine, nor are they the result of insect punctures.

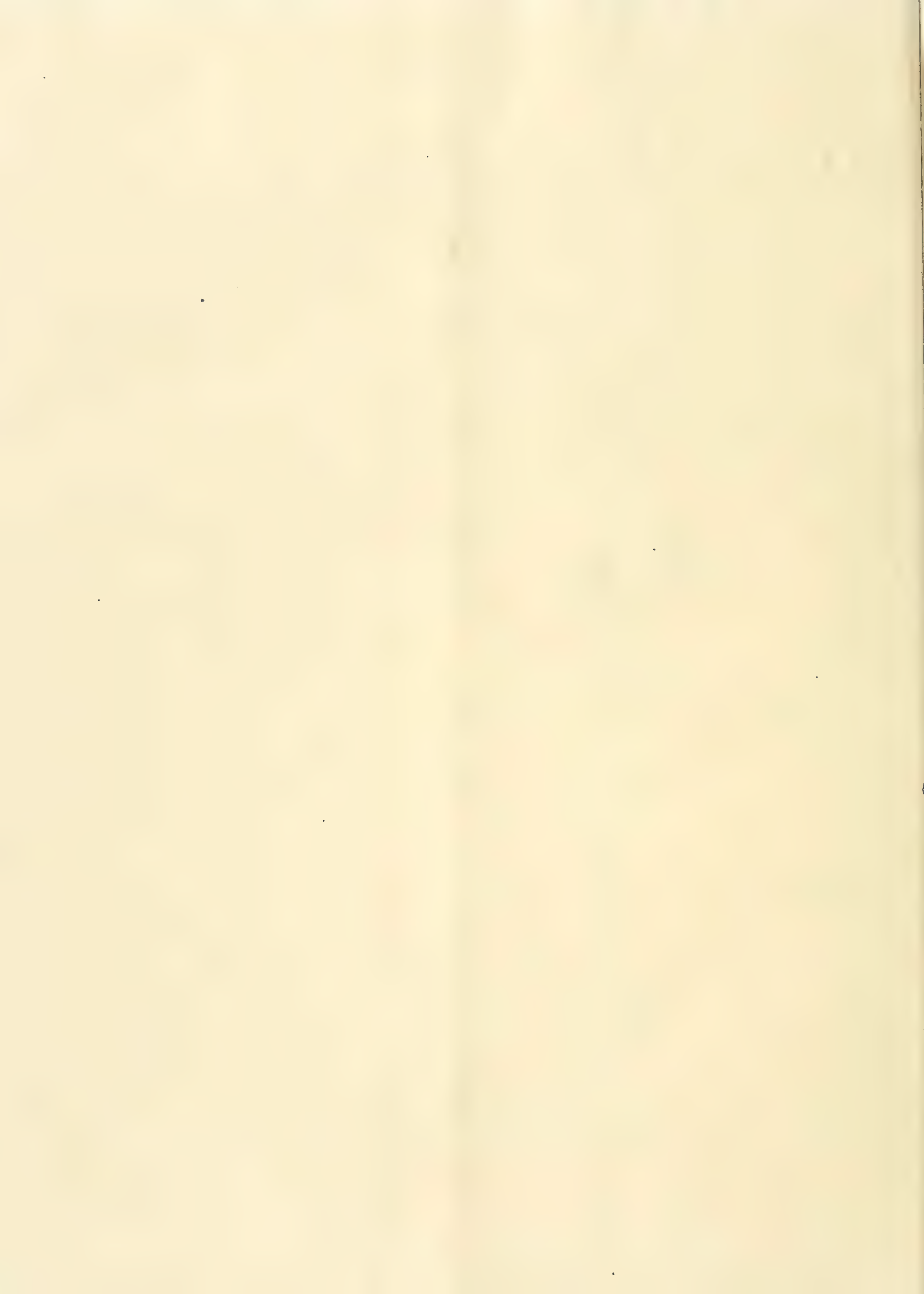
WEED ON LAWN: Constant Reader. *Trifolium minus*. Anything which will encourage the grass, such as farmyard-manure; nitrate of soda, sulphate of ammonia or guano will be injurious to the Clover.

COMMUNICATIONS RECEIVED.—M. Micheli, Geneva.—J. W.—J. P. G.—S. M., Paris.—W. C. & Son.—W. B. & Sons.—A. Gaut.—F. J. Waby.—V. S. F. W.—D. R.—W. H. P.—J. Peed.—R. D.—S. W. E.—C. T. D.—W. J. R.—A. L.—J. P. & S.—K. & Sons.—C. W. Dodd.—W. H. D.—J. S.—T. A.—F. T. Mott.—W. H. H.

(For Markets and Weather, see p. x.)



PORTION OF THE ROCKERY AT FRIAR PARK, HENLEY-ON-THAMES.





THE

Gardeners' Chronicle

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EXPERIMENTAL RESEARCHES
INTO THE ORIGIN OF SPECIES.

M. HUGO DE VRIES has published a paper with the above title in the *Revue Générale de Botanique* (January, 1901, p. 5). He first alludes to Jordan's experiments, according to which that botanist maintained that the Linnean species were not "pure types," but assemblages of constant forms. These were distinguished by numerous characters, although inferior to the specific characters of the Linnean species. They proved to be under cultivation constant and hereditary. These were only what are now recognised as "individual variations," which, excluding selection, always return to the primitive type. But Jordan thought that all species were constant. Evolution has, however, reversed this idea. Nevertheless the constancy of species is seen everywhere; and it is vain to suppose that all are changing but so slowly that one cannot see it. Such changes have not been proved to exist. Since, however, all plants now existing have descended from other species,

their immutability has not always lasted. There must be periodical states of mutability, perhaps short in comparison with others, and only occurring during rare and exceptional circumstances, as by changes of climate, migrations, &c. In this supposition M. H. de Vries is doubtless correct. As long as a plant grows under the same conditions, there is no reason why it should change; but it is well known that varieties appear on the confines of the area which it particularly effects, just because the further it has migrated from its home, the greater is the difference in the environment.

All plants, the author suggests, need not be in the same period of change. Some being temporarily immutable, others may be mutable.

What, then, should be the forms to which a mutable species could give rise? They need not be so different as a lion from a tiger. One should be contented with comparatively slight differences, as between *Cochlearia anglica* and *C. danica*, *Chrysanthemum inodorum* and *C. maritimum*.

The first pair of species to which he alludes, are connected by intermediates, but differ in leaves and pods. The latter species are taken as varieties only, by Hooker.

That which one must look for is, then, a species which produces one or several others, in a certain number of individuals, lasting for a series of generations without disappearing itself. The new species will be sharply distinguished from them from the very commencement, but within the degrees of "allied species." Moreover, they will probably be constant from their origin.

After experimenting with numerous species, the author selected *Oenothera Lamarckiana* (*O. grandiflora*, Lam.). He transplanted young plants, and collected seed from wild ones; and grew them in the Botanic Garden of Amsterdam in 1886. Among the normal plants in 1887, there appeared three plants of a type not previously known. In 1888, he had raised some 20,000 plants; among them the new species of the preceding year was repeated together with another, and dwarf form, being not more than from 10 to 20 cm. in height, the mother plant being 1 m. This has formed a race, constant to the present time.

The following genealogical tree will illustrate the formation of the new types:—

	Generation.	<i>gigas</i> .	<i>albida</i> .	<i>oblonga</i> .	<i>rubrinervis</i> .	<i>Lamarckiana</i> .	<i>nanella</i> .	<i>lata</i> .	<i>scintillans</i> .
Annuals.	8. 1899	...	5	1	...	1,700	21	1	...
	7. 1898	...	...	9	...	3,000	11	...	...
	6. 1897	...	11	29	8	1,800	9	5	1
	5. 1896	...	25	135	20	8,000	49	142	6
	4. 1895	1	15	176	8	14,000	69	73	1
Biennials.	3. 1890-1	...	...	...	1	10,000	3	3	...
	2. 1883-9	...	...	...	...	15,000	5	5	...
	1. 1886-7	...	...	...	...	9	...	...	...

Besides thousands of normal individuals (*O. Lamarckiana*), there appeared annually a number of other types repeating every year those of the preceding years. M. H. de Vries calls these "mutants," as one might call "variants," those individuals which differ from the type in slight characters only, known as "individual variations."

Mutants are the direct products of mutations; they proceed from another species, and have never occurred as far as is known before. The

mutants have established races, and exist to the number of 800, distributed over eight generations, comprising 50,000 individuals—that is, in the proportion of 1½ per cent. The mutants of *O. Lamarckiana* belong to a limited group, being about twelve. Of these only seven are of sufficient importance to be mentioned.

M. H. de Vries described them as follows (abbreviated):—

O. gigas.—Panicle dense, flowers large.

O. albida.—Leaves narrow, pale; flowers pale yellow; fruits short.

O. oblonga.—Leaves oblong, petiolate; spike dense; flowers smaller than parents; fruits small.

O. rubrinervis.—Stem fragile.

O. nanella.—Very dwarf.

O. lata.—Leaves broad; flowers female, by aborted pollen.

O. scintillans.—Leaves narrow, dark green, and shining; flowers and fruits small.

O. gigas only appeared once as a single individual. It is a much more robust form than the mother species. It has been constant from its first appearance.

The other species are mostly weak, and require much care to enable them to flower and perfect their seed.

O. rubrinervis, only, flowers and fruits equally well with the mother species. This and other species have proved constant by artificial self-fertilisation, excepting *O. scintillans*, which is an inconstant form, although sufficiently fertile; one to two-thirds of the seeds reproduce the mother form, the other seeds give the original parent, *O. Lamarckiana* or *O. oblonga*.

M. H. de Vries then draws the following conclusions:—

1. A new species appears suddenly, and it has all the characters of a new type.

2. The seeds of the new type ordinarily come true without reverting, remaining fixed from their first appearance.

3. The new forms are distinguished from the original parent in nearly all their characters.

4. They usually appear in large numbers, viz., from 1 to 3 per cent.

5. Their characters present no evident relation with those of ordinary variations of the mother species. Mutability seems to be independent of variability.

Such, in brief, is M. Hugo de Vries' paper. It is an abstract of a larger work entitled *Die Mutations-theorie*, now appearing in parts. The importance of it lies in its challenging Darwin's and his followers' view, that "individual variations" are the source of the origin of species. Professor Henslow has long ago maintained the reverse; * and it is satisfactory to know that not only the eminent author of this paper, but also Waagen and Mr. W. B. Scott† in America, hold the same view.

The true "mutations," as Waagen proposed to call them, which are variations of a greater extent or a more pronounced character than what are usually known as individual "oscillations," are only brought into play when the *monde ambiante* or surrounding conditions are changed to a more or less considerable degree.

This is always the case under cultivation, so that these results in *Oenotheras* are not at all surprising. When M. Carrière raised edible forms of Radishes from the wild *Raphanus Raphanistrum*, he got a great variety of shapes and colours among the roots; so did Prof. Buckman when he raised the "Student" among Parsnips.

* *Natural Science*, 1895, p. 385.

† On *Variations and Mutations*, Amer. Journ. of Sci., 1894, p. 355.

"Dwarfs" and "giants" are common among cultivated plants, such as the Daffodil, Sweet Peas, garden Pea, Phaseolus, &c. So, too, such appeared among the forms of *Oenothera*.

Similarly in Nature, as long as plants continue to grow in the same kind of environment, nothing of this happens; but individual variations, due to slight differences of nutrition always occur. But when plants migrate, or are purposely transferred from one habitat to another, of a strongly marked but different nature, as from lowland to alpine heights, from arid and poor soil to a rich and moist one, from open country to a forest, or from a dry to a wet region, or *vice versa*. Then, one may look for new forms, whether we call them species or varieties, with some probability of success.

Experience shows that there is no need for long periods to elapse for minute changes to accumulate, for the plant sets to work to adapt itself at once, and when the change has been thoroughly effected, then it becomes hereditary, so long as the same surroundings be maintained as those which induced the change.

Mr. Bateson observes that, "the differences between species, on the whole, are specific, and are differences in kind, forming a discontinuous series, while the diversities of environment form a continuous series." Again he says, since "such discontinuity is not in the environment, may it not then be in the living thing itself?"* But just the reverse is the case. The environment is, and must be, "discontinuous," i.e., of a different kind, in order that new species may arise, so that we are still without practical proof of how species arise in nature. *George Henslow*.

A MIDLAND GARDEN.

SOME years ago I had a small bush of *Prunus triloba*, a very lovely flowering shrub when it does well, which mine did not. The scion gradually died away, leaving only the stock on which it had been grafted. By some oversight this stock was allowed to grow up, and it has now become a considerable shrub of rather pleasing form, with six stout stems from 10 to 12 feet high, but a poor little white flower no better than the Blackthorn. It appears to be the Myrobalan Plum (*Prunus cerasifera*), a species long known in gardens, since it is mentioned by old Gerard in the sixteenth century, but the origin of which is doubtful. It can hardly be a native of this country, as it rarely ripens its fruit. Its chief use is as a stock on which to graft more ornamental species, especially when it is desired to keep them dwarf in habit.

Every nurseryman who grows fruit-trees knows the Paradise stock on which Apples are grafted. I have searched in vain through my library for any reference to the botanical name of this plant. In fifteen different works I found it mentioned as "the well-known Paradise stock," without any suggestion of a scientific name, except that Gerard says "it is called *Chamæmalus*, or Dwarf Apple." On inquiry at Kew Gardens, I am told that it is a tree of garden origin, and is called *Pyrus paradisica*. When or how it was first produced there seems nothing to show. It may be an old Roman form, for the Romans were good gardeners, and understood grafting. (See Decaisne, in *Gardeners' Chronicle*, April 24, 1869, p. 443.)

I visited a neighbour's garden recently, and was surprised to see *Choisya ternata* growing in the open air. It was in a partially sheltered

corner, and was a little damaged by the winter, but I was told that it had been there for several years, and it had grown to a dense bush 5 feet high, and 3 feet thick, and was covered with bloom-buds. I see by the *Gardeners' Chronicle* of May 4 that a much larger bush of this greenhouse plant is growing out-of-doors at Reading, but this is 100 miles south of us.

Have those who possess a Tulip-tree examined the unfolding leaf-buds? Each leaf, inclosed in a pair of oval stipules, is closely shut up like an oyster in its shell, and is carefully folded by the side of a smaller oyster-shell which contains the succeeding leaf. The peculiar form of the leaf is shown in the very earliest stage, and it alters very little as the stalk elongates, and the blade broadens. In most trees all the leaves are of the same pattern, but in many herbaceous plants, especially annuals, the root-leaves differ from those on the main stem, and these again from those on the branches. In the common annual weed called Shepherd's Purse, the first leaves are often quite entire, while the succeeding ones are more and more toothed and cut, till the latest are quite pinnatifid. This plant, *Capsella bursa-pastoris*, is one of those which revel in variations. Some years ago I made a study of these, and carefully described nine forms which seemed to be thoroughly distinct, the multitudes of others being intermediates, with the characters of these nine mixed up in various proportions. Of those nine types, about six can generally be found in my own garden in the course of the year, for the different forms do not all appear at the same season. A good many others among our native plants have the same habit of producing numerous varieties. Of the common Blackberry about a hundred forms have been described and named. Some botanists call them distinct species, others maintain that they are varieties only.

All fruit-trees and bushes promise a good crop this year, but frosts or heavy rains, or hailstorms or plagues of insects and fungi may yet come down upon us and blight our hopes. An ample fruit-crop is a great luxury. Everybody delights in Strawberries and cream. Raspberries and cream are equally good. Most of our common fruits have been cultivated for many centuries, some for many thousands of years. There were vineyards and fruit-gardens in ancient Egypt and Assyria. In England we grow about thirty different species of hardy fruits in the open gardens; of these about one-third were introduced by the Romans and the Crusaders. About another third are natives of our woods and copses and heaths, whence they have been brought into the gardens and improved. The remainder have been introduced from foreign lands at intervals during the last 500 years. But there are at least 600 species of edible fruits known in the world. Most of these are natives of warmer climates than ours; but there must be some, such as the Jujube of Southern Europe, and the Date-Plum of Northern China, which might be acclimatised in England, if skill and science were concentrated upon the problem for a series of years.

In this county, and no doubt in others also, the hedge fruit has a considerable commercial value. Tons of Blackberries, Elderberries, Bilberries, Sloes, and Nuts are gathered in the fields and lanes, largely by women and children, and are brought to the weekly markets, and readily sold. Leicestershire is becoming notorious among botanists for its Blackberries. It is found by experts in the intricate genus

Rubus to be one of the richest districts in England in the number of distinct forms to be seen growing wild.

A handsome plant for the back of a mixed flower-bed, or the front of a shrubbery, is the tall Scotch Thistle or Cotton Thistle (*Onopordon acanthium*), which in good soil will grow to 6 feet in height. Its white cottony foliage and stem, and bold habit, make it very conspicuous. In April it shows only a rosette of large white, prickly leaves close to the ground, and I observe that these erect themselves every night round the central bud as if to protect it, and fall down nearly flat again when the sun gets on them. This sensitiveness of leaves to various conditions of light is not yet fully accounted for. Very many plants "sleep" at night. Everyone knows how the Daisy closes about sunset. Plants with pinnate or ternate leaves very frequently close them at night. But the curious thing is, that some leaves close upwards while others invariably fold together downwards. One object of this seems to be to prevent transpiration or loss of moisture during the night. Most leaves have more stomata or breathing pores on one side than on the other, and it is found that whether they shall fold upwards or downwards depends largely upon which will best protect the stomata. The bending is accomplished by a sudden movement of watery sap from the cells on one side of the base of the leaf-stalk to those on the other side, which are thus made to swell and exercise pressure. But how does the plant know on which side the pressure should be exerted? and why does a change in the light cause a sudden movement in the sap? In a poem on the death of a well-known scientist are the following lines:—

"All the dark puzzles, the unanswered questions,
Which science strewed thick in his way,
Will she now solve them?
Or will death dissolve them
In light from the limitless day?"

In truth the unanswered questions are more numerous than those which we are able to solve.

Twenty years ago I had a thousand roots of the wild Cowslip collected in the fields, and planted them altogether in a bed in this garden. There is a great demand about here for Cowslip-flowers for the manufacture of wine, and I wanted to make experiments on the cultivation of the plant. It is a pretty flower, and my large bed of it made a brilliant show the next spring. The flowers are borne in trusses at the top of a stalk 4 or 5 inches long, and in the fields there will seldom be more than a dozen flowers on one stalk. But under cultivation and in my good soil, I found many trusses of from twenty to thirty, and a few bearing 100 on one head. I got half a gallon of seed from my 1,000 roots, and with this and the roots themselves I planted an acre of land, and cultivated it as an agricultural crop for five years. The result in this case was not commercially successful, but there were many difficulties and drawbacks as usual in a first experiment, and for various reasons the attempt was abandoned. But the introduction of the wild Cowslip into this garden, though so long ago, is still borne witness to by the constant appearance all over the garden of wild Cowslips as weeds. I do not eradicate my old friends, they are welcome to the little space they want. Indeed, I am not sure that for simple daintiness there is anything much lovelier among our cultured favourites. *F. T. Mott, F.R.G.S., Birstal Hill, near Leicester.*

* *Materials for the Study of Varieties*, p. 16.

NEW OR NOTEWORTHY PLANTS.

FAGUS SYLVATICA VAR. ZLATIA.

Numerous enquiries are being made with regard to this new variety of the common Beech, which is still so rare that the following information about

distribute the variety. The young tree at Kew now about 5 feet high, and has shown this spring, for the first time, its real character. Like most shrubs and trees with coloured leaves, it requires to be well-established before it does itself justice; and on the strength of its behaviour in previous years, I am afraid I have more than once spoken

of it with a soft yellow (although scarcely "golden") tint, and as the season advances they become of a deeper and greener shade, till, towards the end of the summer, they are scarcely, if at all, distinguishable from those of the ordinary Beech. Planted against a dark background, one can imagine a good-sized tree of this variety producing a beautiful and striking effect during May and June. *W. J. Bean, Kew.*

SAXIFRAGA "DR. RAMSEY," LINDSAY.

Mr. Lindsay obligingly forwards us a flowering specimen of a hybrid Saxifrage raised by him from *S. McNabiana*, crossed by *S. lantoscana superba*; and to which he applies the name of "Dr. Ramsey." The following are the main features of the hybrid:—Tufted; leaves $1\frac{1}{2}$ in. by $\frac{1}{4}$ in., linear, oblong, glabrous, fleshy, with membranous, irregularly indented margins; panicle 8 to 10 inches high, loosely branched, thinly covered with reddish glandular hairs; flowers $\frac{1}{2}$ inch across; sepals oblong-obtuse, studded with red glandular hairs; petals about $\frac{1}{4}$ inch long, twice the length of the sepals, obovate-obtuse, white, with a few red spots at the base; stamens half the length of the petals; stylose. These characters may be contrasted with those of the parent plants:—

In *S. McNabiana* the fleshy leaves are $2\frac{1}{2}$ inches long, $\frac{1}{2}$ inch wide, linear-oblong, acute, with a membranous indented margin, with very prominent water-pores; the flower panicle is glandular, more branched than in the hybrid, with more numerous and more crowded flowers; each flower measures about $\frac{1}{2}$ inch across; sepals glandular, oblong-obtuse, half the length of the ovate-oblong obtuse petals, which are white, thickly spotted from the base to the middle with reddish-purple spots; stamens inserted beneath a deep, fleshy cup-shaped perigynous disc.

S. lantoscana.—Leaves about 1 inch long, less than $\frac{1}{2}$ inch wide, fleshy, glabrous, linear, oblong, deep red at the base, with an indented membranous margin; panicle glabrous, glandular, many flowered; pedicels all directed to one side; flowers $\frac{1}{2}$ inch across; sepals ovate, acute, glabrous, half the length of the linear, oblong, white petals, which are nearly destitute of spots; stamens from a short epigynous disc.

EUPATORIUM PETIOLARE.

THIS pretty, free blooming, sweet-scented plant came to me from Herr H. Henkel, of Darmstadt, under the name of *E. Purpusi*, so named by the German botanical authorities after the collector who first sent it under the belief that it was a new species. On flowering specimens being submitted by me to the Herbarium at Kew for identification and comparison, it was recognised as an already known species as above named. It is a valuable acquisition for the decoration of the greenhouse at an early season when flowers are scarce, and it exhales a delicate odour of vanilla. It is also extremely free blooming, as my plant produces no fewer than thirty-six bunches of flower on five stems (see fig. 142). *W. E. Gumbleton.*

ORCHID NOTES AND GLEANINGS.

SUNNINGDALE PARK.

MAJOR JOICEY's gardener delights in cultivating and mastering difficult plants, and among Orchids some noteworthy successes may be chronicled which it may be profitable to record. Mr. Thorne remarked to the writer that he finds one of the first steps towards success with plants invariably said to be bad growers, is to place them in baskets or pans for suspending as near to the glass of the roof of the house they are to occupy as may be convenient for affording water, &c. Next, he notes that many things succeed better in this manner, suspended during the growing season in an ordinary plant-stove.



FIG. 142.—EUPATORIUM PETIOLARE.

it may be acceptable to some of the readers of the *Gardeners' Chronicle*. It is a "golden"-leaved variety, and the original tree is said to have been discovered growing wild some years ago on the mountains of Servia. A single small plant was obtained three or four years ago for the collection at Kew from the nursery of Messrs. Späth, near Berlin; this firm being, I believe, the first to

disparagingly of it. The colour of its leaves this spring, however, has been so beautiful, that I have no hesitation in describing it as a distinct acquisition, and one that is likely to become popular. The young, newly-expanded leaves of the common Beech, with their exquisitely tender shades of green, form a beautiful feature of our woods and parks. In this variety, *Zlatia*, the leaves are

EPIDENDRUM (DIACRUM) BICORNUTUM

Is one of the most remarkable successes at Sunningdale Park. Some years ago when a number of newly-imported plants came into Major Joicey's possession the species was not well represented in gardens generally. The plants were mounted for suspending in a warm, moist stove-house, and they have annually increased in size and proportions. This year the great masses of spotless green leaves have produced a beautiful display for some months of more than 100 tall elegant spikes of large wax-like white flowers, with violet spots on the lip. Free drainage, admitting of copious supplies of rain-water during growth, and until after the flowering season, being afforded, is an essential matter in the cultivation of this species.

LUDDERMANNIA LEHMANNI.

A grand example of this extremely rare Orchid with large pseudo-bulbs and ornamental leaves, is in flower here with four racemes over 3 feet in length, of fleshy, orange-coloured flowers depending from it. The plant is similar in habit to the *Acinetas*, and like them, the heavy pendulous inflorescence requires that the plant should be suspended. It is similar to the plant figured as *L. triloba* in the *Gardeners' Chronicle*, December 14, 1895, p. 713, and like it, was of Consul Lehmann's collecting. It is placed in an airy, intermediate house.

BOLLEAS, PESCATOREAS, &C.

This leafy section of *Zygopetalum* is also generally proclaimed to be an almost impossible section to grow satisfactorily. At Sunningdale Park, from very poor beginnings, there are a number of the different species, some or other of which are generally in flower, and not one death has to be recorded. These are either suspended from the glass of the roof, or elevated above the staging so as to bring them near to the glass, and this circumstance if recorded, may give the secret of success to some gardeners who may have failed; for invariably plants, which are short-lived, have been kept on the staging. At Sunningdale, the plants are afforded water liberally whilst growing, and moderately when active growth is for a time suspended, and kept always in intermediate-house temperature.

DENDROBIUM ATRO-VIOLEACEUM AND ALLIES.

These seem to revel in the treatment afforded, and this season there has been a good show of *D. Johnsoniæ*, *D. Madonnæ*, and others of the class, all of which are kept in a warm, moist house. A fine show is made by the numerous specimens of *Dendrobium atro-violeaceum*, and some hundreds of spikes of creamy-white, violet marked flowers have been produced for a long time past, and are still in good condition. The single specimen with 125 flowers, forming the centre of the group of *D. atro-violeaceum* which secured a Silver Flora Medal at the Royal Horticultural Society on April 9, being also the principal plant in the group at Sunningdale at the time of our visit. This species lasts six weeks in a cut state in a good air.

In the general collection there is a good show in most of the houses. In one house, *Thunia Marshalliana*, set up with plants of *Acalypha hispida* and *Gloxinias*, was pleasing and effective. In another house, plants of *Dendrobium Dalhousieanum*, *D. formosum giganteum*, *D. tortile*, *D. chrysanthum*, and other *Dendrobiums*, and *Cypripediums*; also *Epidendrum Wallisii*, *Lycaste leucantha*, *Lælia cinnabarina*, good *Cattleya Mendeli* and *C. Schroderæ*, *Zygopetalum Klabochozum*, and *Acineta Barkeri*, were remarked in bloom. In another house there were in bloom some *Vanda teres*, *Broughtonia sanguinea*, *Celogyne pandurata*, and some hybrid *Cypripediums*, raised on the place. The cool houses had a fine display of *Odontoglossums* and *Masdevallias*; the row of plants of *Sophronis grandiflora* hanging overhead has produced over 300 flowers, and have some still in bloom.

THE ROSARY.

THORNLESS ROSES.

"No Rose without a thorn," is not quite true, for I have seen several Rose plants absolutely without thorns. It seems to me that there is an opening for some skilful rosarian, amateur or professional, to evolve a race of thornless Roses—plants with fine flowers—from those thornless varieties which already exist, by crossing them with the least thorny, but which produce good blooms. To have to handle the stems of most Rose bushes, to tie them up, and prune them, is one of the disagreeable operations connected with growing these beautiful things. I have a Rose-bush called "Mrs. Anthony Waterer." It is said to be a cross between *R. rugosa* and *Gen. Jacqueminot*. Its flowers are of a beautiful crimson colour, and scented, and sufficiently double. Moreover, it forms a very grand pillar, and is very floriferous, and has beautiful foliage. But it is about the most disagreeable Rose-tree to handle, and I never have anything to do with it without feeling inclined to use strong language. Its stems are thickly covered all over with thorns, large and small. No rosarian, it would appear, has ever thought of trying to eliminate the thorns from this jewel of the garden.

To the wild Rose the hooked thorns are of importance, for by them it is enabled to climb to the tops of trees; and I should say most wild Roses are climbers, although it is asserted that it is erroneous to call any Rose a "climber."

In the Himalayas I have seen a wild, pure white, single Rose covering the top of a tree, probably the *R. sinica*; and no doubt its hooked thorns must have greatly helped it to get up there. But in the case of domesticated Roses, thorns might be with great advantage dispensed with, as the plants are either tied up or staked, except perhaps in the case of Briars or Briar-like Roses. It would certainly be a great comfort to those who have to handle them if such an elimination could be brought about. I have no doubt whatever that a race of thornless Roses would in time be evolved by selection and skilful crossing.

Marvellous results in other plants have been brought about by such operations. Lord Penzance endeavoured to improve the wild Briar Rose, at the same time retaining the scent of its leaves. The result has been a beautiful race of Briars. Why cannot somebody with a good bit of lifetime before him try to improve the Rose-bush by eliminating its very disagreeable thorns?

That this can be done there seems no reason to doubt. *E. Bonavia, M.D., May 23, 1901.*

FLORISTS' FLOWERS.

"DARWIN" TULIPS.

A COLLECTION of these Tulips, similar to that sent to the Cambridge Botanic Gardens, came also to me from Messrs. E. H. Krelage & Son, of Haarlem; and in order to give them as good a test as possible, I divided the bulbs into two lots, and gave one half to Mr. Geo. Reynolds, who planted them in his lighter soil at Gunnersbury Park, while I gave mine a decidedly heavier soil at Hounslow; and I had rather finer development in most of the varieties, and the flowers were more lasting. I think there is some delicacy of character in a few of the varieties sent. William Copland, which is a very pretty rosy-violet, failed entirely at Gunnersbury, while only two bulbs out of five flowered at Hounslow. In two or three instances there were failures, though the bulbs threw leaves enough to justify the expectation they would bloom; but the failure was probably owing to some defect in the soil.

The reason why Messrs. Krelage & Son sent me these Darwin Tulips was because I had written somewhat disparagingly of a collection I saw in bloom in the Regent's Park. I had criticised their dull, dingy, metallic colours and inky bases. I

must admit that many in the collection of twenty-five varieties from Haarlem are very handsome indeed, and I take them as representing some of the latest developments in seedlings—at least I infer so from the names they bear. They are mainly of erect growth, with stout stems, elevating their blossoms in a rigid position, and not weak-stemmed, as not a few of the May-flowering species and varieties of Tulips are. The height of the stem, which Mr. Lynch seems to deplore, is the very characteristic which commended itself to Mr. Reynolds, on the ground that length of stem renders these Tulips of such value when arranged in vases. This is the day of long-stemmed flowers.

Mr. Geo. Mount, of Canterbury, told us not long since that long-stemmed hybrid perpetual Roses found a readier sale, and fetched a higher price in the shops of the West End florists, than the short-stemmed Teas and Noisettes. Carnations on long stems are decidedly in the fashion. The same with Chrysanthemums and other flowers. Raisers of Cactus Dahlias are exhorted to produce long-stemmed varieties, which is quite in keeping with the trend of things floricultural.

As Mr. Lynch remarks "that the Darwin Tulips are far more satisfying, in consequence of their self colours, than are the florists' Tulips," I am led to infer he has probably never seen a bed of florists' breeder Tulips, and is familiar only with some inferior broken forms of them. There is a great wealth of self flowers among the florists' Tulips, for the simple reason that seedlings, almost without exception, flower first in the self or breeder state; and at a Tulip show not the least attractive feature is the stands of breeder Tulips. Messrs. Barr & Son had at the Temple Show bunches of English breeder Tulips, and among them one that, to my thinking, surpassed in beauty of expression any Darwin Tulip to be found in the show, namely, Annie McGregor, to which the Floral Committee made an Award of Merit. A popular Counsel recently in a law court endeavoured to make it appear that as a Chrysanthemum five years old had obtained a Certificate of Merit, it must have been by fraud, on account of its age; but what would he say of Annie McGregor Tulip, which must be near upon a half century old, gaining an award? The rich colouring and beautiful form of Annie McGregor was enhanced by reason of its pure white base; and remembering that the richest tint of a breeder Tulip is often on the interior of the petals, when there is a white base, the contrast is all the more marked. Many of the Dutch Darwin Tulips have their brightest colour inside the cup, and when one looks for these, there is confronting them an impure, stained, or inky base.

I share with the old Tulip fanciers my admiration for and the value to set upon a pure base, both yellow or white—yellow in the bizarre, white in the bybloemen or rose. It is a property gained after many, many years of cultivation, and it is all the more valuable on that account. I hope some enterprising Dutch florist will take in hand the Darwin breeders, and endeavour to eradicate the inky base. We want no dregs in the bottom of the gorgeous floral goblet. It is worth attempting. So much has been done to improve the colours of the Darwin Tulips that it would be a pity to stop short of the eradication of what the old Lancashire florists look upon with something akin to detestation—a stained base [but what about those poor creatures who prefer such a condition? Ed.]-
R. Dean.

PARIS.

THE PARIS HORTICULTURAL EXHIBITION.

At the "Great Horticultural Exhibition," a report of which was given in our last issue, and which was closed on Wednesday, June 5, an excellent idea was obtained of a Parisian flower show at a glance. The show beds raised about 18 inches from the ground were in various forms, such as circles, ovals, half moons, &c., and presented

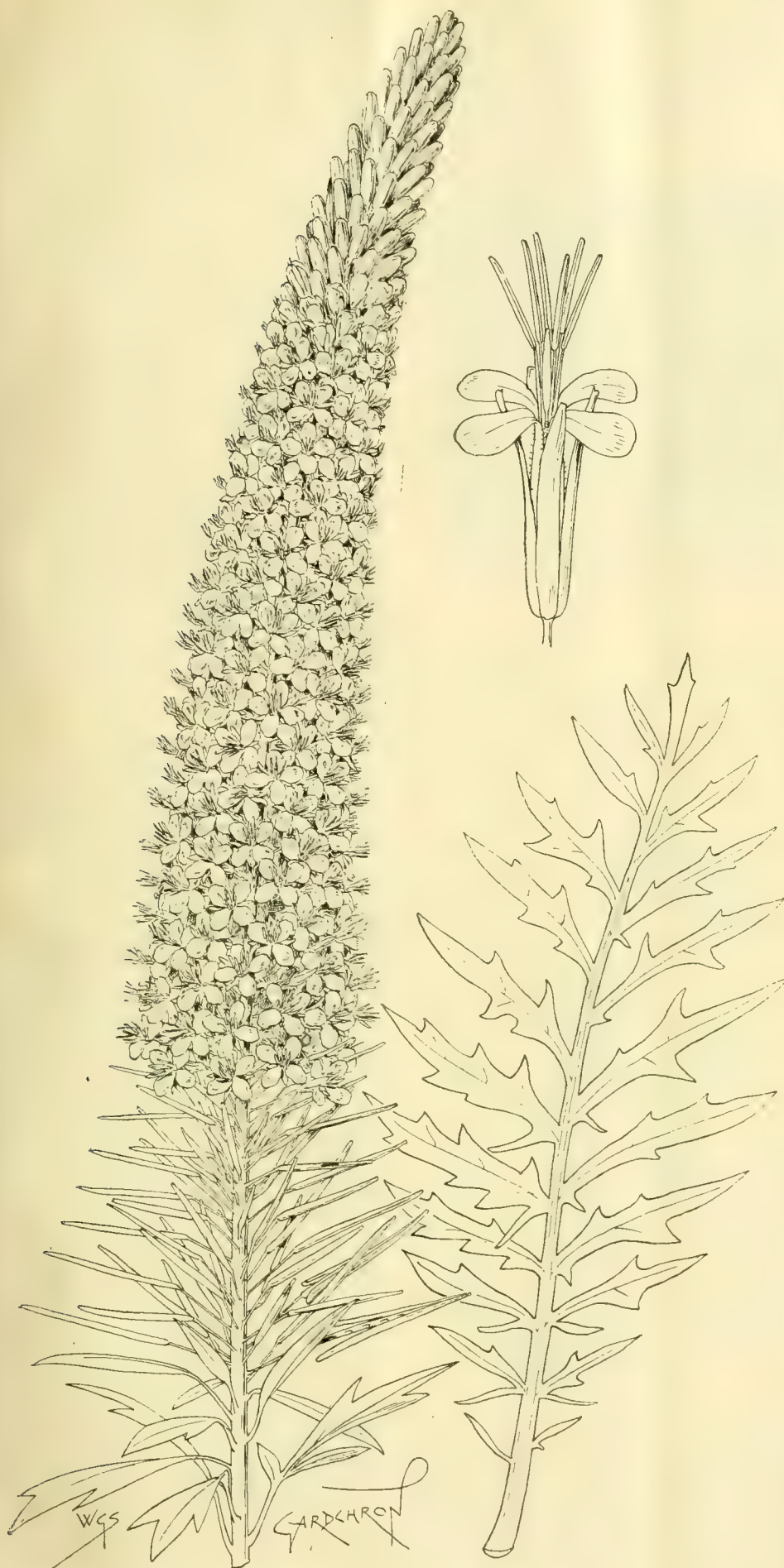


FIG. 143.—STANLEYA PINNATIFIDA: FLOWERS YELLOW.

quite an artistic effect. Where perennials or annuals are to be exhibited, these beds are much more suitable than tables. Unfortunately the storm of tropical violence which raged for two hours on the opening day quite flooded the huge marquees a foot deep, thereby closing the exhibition for the rest of the day. One could not help feeling sympathy for the unfortunate exhibitors who had their show-plants broken by the public climbing upon the beds to escape the water.

It was a sight never to be forgotten to see the Parisian belles and fashionable society being conveyed on the backs of white-smocked porters from the low-lying Tuileries gardens to higher and drier ground. The showy perennials, dainty annuals of Messrs. Vilmorin, Andrieux et Cie., Orchids from Mr. A. Truffaut, and huge specimen Rhododendrons from Mr. Marcel Moser, were quite features of the show. The Parisian style of table decoration by Mr. Moser was also quite pretty.

Roses were shown in a manner which, in the opinion of the writer, could be practised more in this country with less subsequent disappointment to amateurs, hence good to the trade, viz., the blooms exhibited were shown growing on the plants. The only English exhibitor was the firm of Hugh Low & Co., of Bush Hill Park, who brought over their pretty new dwarf *Schizanthus Wisetonensis* (the poor man's Orchid).

The Parisians were naturally much taken with this artistic plant, and I understand have added another award to the already lengthy list. In a neighbouring group were seen some of the old varieties from which this novelty has been obtained by years of crossing and selection.

The exhibition, in spite of the bad commencement, was a great success. The President of the French Republic paid an official visit on the first day, and one could continually see our own countrymen evidently taking as much interest in the horticultural display as in their own country. J. C. Lawrence.

STANLEYA PINNATIFIDA.*

THIS is a tall-growing, cruciferous perennial, with ascending branches, having much the look of a Capparid; indeed, it was originally referred to *Cleome* in that order. The plant is more or less glaucous, the lower leaves rather succulent, 5 to 6 inches long, 3 inches broad, stalked, deeply pinnatifid with linear segments, the terminal segment much larger and broader than the lateral ones. The uppermost leaves are linear entire. The yellow flowers are borne in long terminal erect racemes, 10 to 12 inches long, with numerous scattered flowers. Each flower is about 1 inch across, with linear yellow spreading sepals, erect stalked petals of the same length, six linear stamens, surrounded by glands, and long linear pods, 2 to 3 inches long. It is said to occur from Dakota and Nebraska to California, New Mexico and Arizona. It is suitable therefore to hot dry climates. We should recommend it to be tried by the seaside and on old walls, where masses of it would be very effective. The plant was exhibited by Messrs. Bunyard, of Maidstone, to whom we are indebted for the specimen illustrated (see fig. 143). Some of our American colleagues have got a little "mixed" over the name of this plant, which they say is named "for" [sic] Lord Stanley, President of the Linnean Society, thus confounding the Bishop of Norwich, who was the President with Edward Stanley, Earl of Derby, who was well known as a naturalist, especially a lover of birds, and was the possessor of a fine menagerie. In their anxiety to secure precedence for the oldest specific name, the authors of the very useful *Illustrated Flora of the United States*, have been led into an error, for the leaves are not pinnate; and they have invented a useless synonym—one, moreover, which has a tendency to perpetuate an error, or to mislead the

* *Stanleya pinnatifida*, Gray, *Genera*, 65; *S. pinnata* Britton & Brown; *Illustr. Flora of N. U. States*, &c., vol. ii., 1897, p. 109.

beginner. The system generally adopted here, of adopting the oldest name in the correct genus, leads to no confusion. Historical detail can be added to the synonymy when requisite.

THE BULB GARDEN.

HÆMANTHUS KATHERINÆ AND ITS ALLIES—THEIR CULTURE.

THOSE species of *Hæmanthus* having membranous leaves and umbels of spreading flowers, of which *H. Katherinæ* is the best known example, have become deservedly popular, and given a suitable compost and a small amount of attention to the rest required by each species, their cultivation is an easy matter.

H. cinnabarinus, though easily grown, proves to be one of the most difficult to flower. Strong plants produce fully sixteen leaves, from 1 to 2 feet in length; they are distichous, evergreen, and devoid of a distinct leafy stem. The scape arises from the centre of the leaves, and bears a rounded inflorescence 9 inches across, consisting of about thirty spreading crimson flowers, each averaging an inch across. The inflorescence much resembles that of *H. Katherinæ*. Plants of this and the following species require a compost of turfy loam, half decayed leaves, and broken sandstone, in equal proportions, using this in a very rough state. *H. cinnabarinus* grows best in a relatively large flower-pot, the roots being produced in great numbers from the upper half of the root-stock, and are not inclined to penetrate the soil far, but run just beneath the surface. Where it is possible to withhold water when the plants have finished growth, it is more satisfactory to plant them in a border overlying ample drainage. It must not be severely dried off; a decided rest during winter is all that is required to produce flowers. It is a native of the Gold Coast, and, from the appearance of the plants I should imagine it grows beneath trees in a heavy deposit of humus. It grows best in the shady end of the stove house.

H. Katherinæ, a well-known, handsome species from Natal, is very easy to grow. It produces a distinct leafy stem, bearing from six to eight deciduous, flaccid leaves, 6 inches broad, 1½ foot long. The inflorescence is borne on a separate stem, and consists of about thirty bright red, spreading flowers, each 2 inches long and 1 inch across; the whole inflorescence spans 10 inches. Though it can be grown successfully in a warm greenhouse, it will grow twice its normal size in the stove, and produce flower-heads over a foot across. The plant requires but a small quantity of water when at rest; still the leaves should be maintained in a fresh state as long as is possible. It flowers when the leaves have fully developed in early summer.

H. multiflorus is widely spread over tropical Africa, and, as may be expected of a species which covers such a large area, a great number of forms differing from the type plant in the matter of colour and size are met with in gardens. The cultural requirements of the plant are equally varied, inasmuch as one specimen may succeed where others fail to grow. Where definite information as to the source of an importation is not obtainable, a guide to cultivation may be found in the roots the plants produce. Those from dry, arid districts usually have larger root-stocks than bulbs, and they produce thick, fleshy roots nearly as thick as a lead-pencil, which go straight to the bottom of the pot without branching; they also have tougher leaves—all indications of a habitat on the open plain. Those plants which have lived under more genial conditions will have larger bulbs than root-stocks, and thin roots which branch freely before they reach the bottom of the pot. The leaves will also be of a thinner texture, and will probably scorch when exposed to the sun's rays—an indication of habitat near trees. The leaves are produced on a special, handsomely spotted, leafy stem, 2 feet high, and average a foot in length, and half a foot in width.

The peduncle, which appears before the leaves develop, and which is also handsomely spotted, supports a globose inflorescence consisting of a large number of thin rich red flowers, each an inch across, densely packed on the top of the peduncle. As a rule, stove treatment during growth, and a fairly dry resting period, suits the plants well, but individuals from unknown sources require careful watching before they can be successfully treated.

Propagation is easily effected by offsets, which the plants produce in some numbers, especially if encouraged to grow beyond their normal season; also by seeds when the flowers are carefully fertilised. Seeds should be germinated in coarse sand and chopped turf fibre, and afforded water with great care till the seedlings are one year old, when they may be encouraged to grow as fast as they will. Year old bulbs should measure nearly an inch in diameter.

Many of the species intercross readily, several hybrids having already been obtained in the genus. *Nerines* are so very close to *Hæmanthus*, that there is a great probability of a successful cross resulting from experiments in this direction. They are as closely allied to each other as *Brunsvigias* are to *Amaryllis*, *Eucharis* to *Urceolina*, and *Vallota* to *Cyrtanthus*—genera which have yielded bigeneric hybrids of great garden value. *Geo. B. Mallett*.

CULTURAL MEMORANDA.

STRAWBERRIES.

EXCEPT where there has been a heavy rainfall, and so far that does not seem to have been generally the case, Strawberry breadths should, whilst the fruits are green and swelling, have a thorough soaking of water. But surface watering is of little value except that it temporarily moistens the leafage, whilst its tendency is to attract roots to the surface, and later the plants suffer for that reason from heat and drought. When a thorough soaking is given to the soil sufficient to penetrate some 9 or 10 inches, and is soon after followed by the application of a mulch of long, clean manure litter or of straw, then the watering will do more to assist the plants to swell up the fruit than will a dozen mere surface moistenings. Free waterings may be given so long as the fruits are green, but even then it is wise to draw straw up to the plant quite close, that the fruits be thrown up from the ground, that the water may not be brought into immediate contact with them. Cold water is apt to generate mildew, than which nothing can be worse for the Strawberry. It is not merely the moistening of the fruit, but the sudden reduction of the temperature of the soil which leads to such evil results. Where water is obtainable from a pond or stream, or an exposed cistern, then no harm is done. Flooding Strawberries that have been freely mulched with litter is also productive of mildew, as the strawy mulch not only is cold for some time, but soon generates damp about the fruits, especially at night. Instances have not infrequently occurred where a wet mulch has caused great injury to flowers from white frosts, whilst where no such mulch was laid, no harm was done. But when the breadths have a soaking it is best to lay down the mulch a few hours later on. *C. H.*

CUT FLOWERS.

MOST of us can remember the time when the general way of arranging flowers was in a tight mass, with little foliage (and that little like a collar round them, as in the penny bunches of Violets in the streets to-day), and all the flowers placed at about the same level, and of many colours, so that the whole bunch or bouquet looked like a many-hued pin-cushion. Happily this is not often seen at the present day in the houses of refined people. The capacity for the beautiful arrangement of flowers is the result of a considerable amount of cultivation of the artistic faculty, and of years of experience.

Doubtless the present-day loose arrangement of flowers with long stalks and plenty of foliage, is often mainly owing to the fact that it is the fashion to so arrange them, as one so often sees incongruous colours side by side, and very unnatural positions of flowers, showing that the sense of colour and the idea of gracefulness have not been developed.

The principal thing to be borne in mind in arranging flowers is to so dispose them that their positions are so far as possible the same as they would occupy if they were growing, with a due proportion of foliage among them, the natural foliage by preference, where it adapts itself to it, and can be obtained without much damage to the plant. Some things, such as *Rhododendrons* and *Syringa*, have enough of foliage growing on the stem round the blossom; whilst others, such as *Gaillardias* and *Lilies*, scarcely produce any. A strict adherence to this principle can only result in lightness and grace. It necessitates cutting the flowers with long stalks, often with many undeveloped buds on—and do not the buds amongst the flowers increase their loveliness?—and sometimes long sprays a couple of feet in length.

Another thing to be borne in mind is, that a large variety of flowers in a bowl or vase not only does not look natural, but lacks beauty and a sense of repose. One never sees it in Nature, two or three sorts mixed together being about the limit, and then one very often forms the groundwork for the others, e.g., Daisies for Buttercups and Cowslips, Anemones for wild Hyacinths, &c. Some of the loveliest arrangements of flowers I have ever seen have consisted of only two different sorts, sometimes of only one—White Everlasting Pea (*Lathyrus grandiflorus*) and Sea Holly (*Eryngium amethystinum*), Solomon's Seal, and Leopard's Bane (*Doronicum*), *Kerria japonica* and young Oak shoots, Spindle-tree berries and bronze Barberry-leaves, and a very free arrangement of China Roses. The reason such arrangements give so much more gratification to the trained eye than a mixed collection is, that it is very difficult to get half a dozen different flowers to go well together. They form a veritable concert of the Powers.

A clashing of colours often occurs through an ill-advised selection of the receptacle the flowers are put into, or a want of harmony between the flowers and the table cloth, the wall-paper, or the general colour of the furniture and hangings. This is a very large subject, and can only be dealt with here very briefly. A cultivated taste, such as is developed by some training in the fine arts, is the only sure guide in this matter. It can be acquired in some degree by using the powers of observation and comparison; by the constant exercise of the critical faculties one's power of judging becomes immensely increased, and is brought into play almost unconsciously. It is difficult to lay down fixed rules in this matter of colours, because the variety of colours is so great: yellow, for instance, ranging from the pale yellow of the sulphur Hollyhock to the deep orange of some *Eschscholtzias*, and the orange-red of *Montbretias* and many *Lilies*. The Hollyhock might harmonise with certain surroundings, whilst the *Montbretia* might clash with them.

To generalise broadly, it may be stated that for a red room, scarlet and yellow flowers and the many intervening shades of orange-red, do well; and this allows us *Gladiolus Brenchleyensis*, *Tritomas*, red and yellow *Dahlias*, Sunflowers, and a vast number of others. For a room where blue or green predominates, yellow flowers will also do very well; while if the room is yellow, blue flowers will look better than any, though with certain shades of yellow, purple flowers produce a fine effect, and, of course, any colour from yellow to red.

As yellow flowers are so abundant it is fortunate they go with almost any other colour. They go so well with a green table-cloth that it is worth while having one (not too bright) if it does not disagree with other things in the room. With white or

cream-coloured rooms nearly all flowers agree, if the furniture is not of too pronounced a tone; but of course the same care must be exercised in putting different coloured flowers into juxtaposition as in suiting the flowers to the colours of the rooms containing them.

The matter of receptacles for flowers, too, needs some little consideration to facilitate the loose and natural arrangement of flowers. Wide vessels should have some smaller vessel put in the middle to help support some of the taller ones. Sometimes a wire frame-work with two stages or floors, one near the bottom of the vessel and one near the top, is very convenient, and they cost very little to have made, and in fact can be easily made by oneself. They are especially helpful for maintaining in position long sprays of Roses.

Sometimes vases have a tendency to overbalance when tall sprays are used, and this can often be counteracted by putting a folded strip of lead at the bottom of the vessel if it is not too transparent. Pieces of crumpled-up wire netting, galvanized by preference, are handy at the bottom of a vase to help keep long stalks in position. These last two devices may be varied in many ways.

Let no one think that an abundance of flowers is necessary to produce beautiful effects. Some of the loveliest effects are produced by a very sparing use of flowers, especially in the spring and autumn when there is such a wealth of colouring of foliage in our English hedge-rows as well as in the garden. As an illustration of this, and in addition to the instances quoted above, the fresh green leaves of the wild Arum, if pulled up as entire tufts, make a few Narcissus go a very long way, and are very effective too. *Alger Petta*.

THOMAS MEEHAN.

WE are glad to be able, in the present issue, to lay before our readers a portrait of this gentleman, to whom a Veitch Medal was lately awarded, and who has risen from the position of a garden-boy to be one of the prominent citizens of Philadelphia, a leading member of the Academy of Sciences of that city, and the head of one of the largest and most important nurseries of the United States.

The details of Mr. Meehan's career which have found their way into the Press are in many points erroneous, so that we are pleased to be the means of publishing a more correct account.

Edward (Edmond) Meehan, the father of Thomas Meehan, was of an old family of landed proprietors and merchants of Carrick-on-Suir, Ireland. His father dying when the boy was young, he was cared for by a maternal uncle, and finally apprenticed as a gardener in the establishment of the Lord Lieutenant of Ireland at Dublin. When out of the term, he went to the famous nursery of Watson at St. Albans, and when still young was engaged as gardener to Admiral Byng, M.P. While there he married Sarah Denham, of an old family of Potter's Bar, and with a considerable united capital engaged in a fruit, vegetable, and provision business at Regent's Park. The "goodwill" that they had been induced to buy proved a myth. He returned to his original profession, to Bunney's Nursery at Ball's Pond, Islington, and soon after went with his family of wife and two children as gardener to John Young, Esq., on his large estate at Westridge, in the Isle of Wight. Here he erected the first house for the growth of Pineapples in the Isle of Wight.

In the "backwoods" of "Squire" Young's Scotch Fir plantation, young Thomas Meehan used to love to sit on the brown Pine-needles and alarm suddenly the young snakes till they scampered into their mother's mouth for protection. With no other boys to play with for miles around, he spent his time in writing boyish essays on what he saw. In some way, in after years, one essay of an eight-years'-old boy got into print, and brought on him a burlesque by Dr. Lindley in an early number of the *Gardeners' Chronicle*—a cut with Meehan's viper still further evolutionised till its

tail had become sagittate, so that it could spear a mouse, and pass it to its mouth without moving itself. Professor Brown Goode, of the Smithsonian Institution, however, took up the question and proved by overwhelming evidence that the eight-year-old boy was right.

Mr. Meehan here supplies the explanation of what has always been a puzzle to us. In our volume



MR. THOMAS MEEHAN.

for 1848, December 16, occurs the illustration we now reproduce, with no explanatory text (fig. 145). Now, after fifty-three years we are told from the other side of the Atlantic what it all means. An extensive correspondence on the subject will be found in the volume above referred to.



FIG. 145.—MEEHAN'S VIPER.

If Mr. Meehan were to systematise his numerous contributions to scientific botany, he would probably begin with "Experiments in Raising Double German Stocks from Single Ones," under the signature of "A South Briton," in Harrison's *Floral Cabinet*, go on to Dr. Lindley's encomium on his account with samples of the production of the hybrid Fuchsia "St. Clare," under the signature of "L. F.," and which caused its transference to

Youell & Co. of Yarmouth, and the boy of fifteen proudly wore his first frock-coat, bought with the £1 note the Youells sent him! and then go on until to-day with a paper just ready for the press, showing the herculean power of plants, that can even bend mature branches of many years age, when circumstances warrant it; bending in various ways so as to utterly change the whole skeleton form of the original tree—and this while we have all been believing that "the tree grows as the twigs inclined." Fortunately the Royal Society has included in its catalogue references to most of his leading papers, so that his work will not be utterly lost.

In those days the eastern part of the Isle of Wight was thinly populated. Ryde was little more than a village—the pier had not been built, and Thomas Meehan had little more than the woods and fields for his playmates and companions. There were no schools within reach; his mother taught him the rudiments of a school education, and he employed much of his time in observing birds and other animals, and in writing boyish essays about them. Two attempts were made at establishing a private school at Ryde, and one at Brading, to each of which Thomas was sent. They all failed for want of patronage. At length, in his tenth year, a Lancastrian school was started in the Sunday School of Guyer's Independent Church in Ryde, which Thomas attended till twelve years old, when he was taken under his father, who at that time had become gardener to Colonel Francis Vernon Harcourt, at St. Clare, near Ryde.

At fifteen, a number of young men between fifteen and twenty-one united together for self-education, the one the most proficient in any branch of knowledge being the leader for the evening. Every branch of a "polite education" was included in their "curriculum." Ancient and modern languages, mathematics, chemistry, and "what not," were patronised. It is believed that the once popular Mechanic's Institutes originated from the work of these young men. Thomas was known for his enthusiasm in gardening, and always found friends. At 17 he was engaged as gardener to Paymaster Vaux, who had a large garden, with Orchid and other plant-houses. Falling sick with bilious fever, Mr. Vaux decided that he was too young for the post, but at 18 he was engaged as gardener to Sir Augustus Clifford, Usher of the Black Rod, at Barfield House, near Ryde, where again he found warm friends. At 19 he was offered the position of gardener at Appley Towers, and at the same time Dr. Bromfield and the late C. C. Babington, endeavoured to get him into Kew, which had recently been placed in the hands of Sir William Hooker. While his father pressed him strongly to take Appley Towers, he felt himself too young for so great a responsibility, and the Kew offer was accepted.

While at Kew he became intimate with John Murray, who afterwards went to America, and became a popular Unitarian Minister, but he could not impress young Meehan that America presented better openings for a young man than England. But subsequently he made an engagement with the Earl of Shrewsbury, through the friendship for him of the Countess of Clare, to be head gardener at Alton Towers. Soon after the engagement he received notice that only persons of one particular religious denomination were engaged in that establishment—that the engagement with him must therefore be cancelled. Annoyed that a matter of this kind should lie in the way of advancement, he decided to follow his friend Murray to America if the chances offered. Murray had found a starting-point with Mr. Robert Buist, the famous Philadelphia nurseryman of that time. A letter to Mr. Buist brought the promise of aid to Meehan also in the future.

There is little foundation for the statement that political reasons induced Sir W. Hooker to look with disfavour on Meehan. The only ground for disapproval was that Meehan and some others, while willing to act as special constables at Kew during the Chartist riots, objected to serve in that

capacity in any other part of London. There was also some disagreement about the taking of specimens by young gardeners, Meehan refusing to give up the names of some whom he knew to have been guilty of the practice. Both Sir William Hooker and the Curator, the original John Smith, were subsequently on friendly terms with Meehan.

After serving the two full years at Kew, he found employment in the nursery of Bridgewater Page, of Southampton. After a short time here, through the favour of Lady Catharine Vernon Harcourt, he was engaged as gardener to the Earl of Hardwicke at Sidney Lodge.

Here again he found good friends, and the Earl and Countess, before starting on a long voyage in the *Vanguard*, the Earl being First Lord of the Admiralty, arranged that on his return (Donn) the aged gardener at Wimpole Hall at Cambridge should be pensioned, and that he should have the place. Following this Mr. Buist wrote that he might now come to him. The struggle between having the chance of succeeding to the author of the *Hortus Cantabrigiensis*, and going across the water was severe; but America won, and Meehan reached Philadelphia the day following his twenty-second birthday.

Mr. Buist was arranging the removal of his nurseries and greenhouses to a large tract outside the city limits, but was not prepared to give up the oversight of his city business. To Mr. Meehan was assigned the duty of taking charge of the new establishment, under an agreement to retain the position for three years.

When a little over a year had passed, Andrew M. Eastwick, railroad builder for the Russian government, had become the owner of Bartram's Gardens. He had but one week before returning to Russia, and engaged Mr. Buist to find someone who was at once botanist, landscape gardener, and farmer, to take full charge during his proposed long absence. He had secured the property in accordance with a desire when a poor apprentice, to secure and preserve the gardens for ever, as the only spot in which he had any pleasure when an orphan boy by a Sunday afternoon under the shading trees. Mr. Buist and Mr. Meehan both did their best, but just the person desired could not be found in the few days at command. In desperation to keep his word with Mr. Eastwick, it was proposed and agreed on that Mr. Meehan himself should go there.

On the return of Mr. Eastwick, two years later, Mr. Caleb Cope had received from Kew seed of the Victoria Regia, and had built a large house on the plans of the Victoria-house at Kew and Chatsworth, and Mr. Meehan was induced to go there and take charge of it. The flowering of the Victoria was a great event in those days in America.

In 1853 he started with 1000 dollars capital and the rental of 3 acres of ground, the Germantown Nurseries. It was the first attempt to make a specialty of the many beautiful trees and shrubs of America, only European nursery trees being grown from direct importations. The business has grown to immense proportions. Mr. Meehan is prouder of his business success than of his reputation in science, literature, or even as a public man in municipal affairs—especially as there is a general impression that to succeed in these lines one must neglect and be unfitted for business pursuits. He divided his business several years ago with his three younger sons, but still continues active work as a partner, with one-fourth interest in the large concern.

Mr. Meehan, in the notes he has furnished us, does not allude to his travels through the States, nor to his invaluable services to the Academy of Science.

TREES AND SHRUBS.

GENISTA HISPANICA.

TOWARDS the end of the month of May, and early in the present month, various shrubby members of the Broom family are at their best; but

none produces a more brilliant effect than the Spanish Furze, a dwarf, gorse-like shrub. Planted in masses a few yards in diameter, it forms at the present time in the grounds at Kew a conspicuous and beautiful feature, being covered thickly with flowers of a bright golden yellow colour. The plant does not grow higher than 2 feet, has a compact, rounded form, each plant, if not crowded by others, forming a sort of hemispherical mound. It may be recommended for planting on rockeries or other positions where low-growing shrubs are required. The leaves are simple, of lanceolate form, and confined to the flowering growths, the other parts of the plant consisting mainly of green-branched spines, which give the shrub an evergreen character. Among British plants its nearest ally is the Needle Whin, *Genista anglica*. It is, as its name implies, a native of Spain, but it is also found in other parts of South-west Europe. Aiton says it was introduced in 1759. W. J. B.

THE WEEK'S WORK.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HUSSEY PACKE, Esq., Prestwold Hall, Loughborough.

The Stove, Heat, Ventilation, &c.—For a period of six weeks from the present time, artificial heat will scarcely be needed in the plant-stove, at the least during very warm weather. The dryness of the outer air will demand the constant damping of the paths and stages; and air may be afforded freely in the early part of the day, closing the house at 3.30 P.M.

Re-arranging and Potting—The present is a suitable season to re-arrange the plants below the stages which, through heat and dryness, may have become shabby-looking. The commoner *Adiantums*, *Pteris*, *Polypodiums*, *Rex Begonias*, *Rivina humilis*, and *Tradescantia* in variety; *Lycopodium denticulatum*, *Oplismenus Burmanni variegatus*, are such as are usually grown in this position. Continue to shift into larger pots such plants as require more root space, to wit, *Centropogon Lucianus*, which may be shifted into 9-inch pots; *Euphorbia jacquiniiflora*, *Plumbago rosea*, and *Pentas carnea*—for this last, a 7-inch pot will be large enough. Plants of *Eranthemum pulchellum* may now be shifted into 32's, and moved later into pots of one size larger, if for flowering in the winter and spring months. Afford shade and humidity to all plants newly potted, otherwise they will lose their foliage. *Ixoras* from late struck cuttings, which are showing flower-trusses, should receive occasionally weak manure-water, or a dressing of Standen's or other artificial manure. Diligently regulate the growths of climbing plants. Most plants which are carrying flowers will be the better for being placed in an intermediate-house, and out of the way of syringing, as it suffices for these if the paths and stages are damped occasionally.

Pancratium fragrans.—When the flowering season is over, repot all those that have become pot-bound, shaking them out of the exhausted soil, and dividing and re-potting the bulbs, putting one bulb into a 6-inch or three into a 9-inch pot. If very large specimens are desired, shift the entire mass without dividing it. A suitable compost for *Pancratiums* consists of turfy loam $\frac{2}{3}$, leaf-soil and decayed manure $\frac{1}{3}$, and more or less of sand to give porosity. The tubs, &c., must be well drained, and the potting firmly done, the bulbs being sunk to half their depth in the soil. Plunge the plants in a bottom-heat of 80° to 85°, syringe the tops twice a day, and shade them till growth commences. Any which are left undisturbed should be afforded weak farm-yard manure-water, and be kept in a moist pit during the period of growth, afterwards exposing them to sunshine to ripen the bulbs.

Richardias for flowering late may be planted at this date in shallow trenches, dug out about 2½ feet apart, and leaf-soil and spent Mushroom-bed materials put in the bottoms of the same. Let the plants which have had a partial rest be shaken out of the old soil, and plant them at 1 foot apart in the middle of each trench; apply water then and frequently afterwards. The new leaves should be secured loosely to short stakes. *Richardia Elliotiana* may be placed at the warmer end of the greenhouse, where it will continue to grow for two months longer.

Cyclamens.—These plants being well advanced may be put into the pots in which they will flower, viz., large 48's. Two-year-old plants which may be worth retaining, may be potted into large 32's, making use of a compost of loam, leaf-soil, dry cow-manure, silver sand, and finely-sifted lime-rubble. Let the drainage be good, and make the compost firm round the old ball with the fingers only. Place the plants in pits or frames having a night warmth of 58°, and let the leaves almost touch the glass. Ply the syringe twice a day and afford shade when the sun shines brightly. In the course of a month remove the plants to cold frames, still keeping them close to the glass. In the month of August the lights may be pulled off the pits, &c., on fine nights.

Cannas.—The latest *Cannas* should be potted for flowering in the winter months, and when established afford weak manure-water once or twice a week. The plants may be accommodated in a span-roofed frame, or in a sheltered spot out of doors.

THE HARDY FRUIT GARDEN.

By C. HERRIN.

Strawberries.—The warm weather is bringing on the Strawberry crop rapidly, and in country gardens nets must be put over the beds in order to protect the fruit. The netting may be laid on the beds without other support than that afforded by the plants themselves, but it is more convenient if it be fixed so high that a person of ordinary height may gather the fruits underneath without the removal of the netting. If the early Strawberry-beds are situate near to a wall, short wooden stakes may be driven into the ground along the front, standing about 4 feet out of the ground, and at a distance of 8 to 10 feet apart. On the top of these battens may be nailed, to which the netting may be fixed, and also to similar battens fixed on to the top of the wall. The net should be sufficiently broad to lap over the battens on the posts, and be attached to 9-inch boards set on edge. Where large areas have to be covered, a stout framework should be erected to carry the netting from 5 to 6 feet high, and so to allow a person gathering the fruit to pass under it. This frame may readily be constructed with iron wire and poles. Mice are often troublesome among the fruit, and baited traps must be set for them.

Peach and Nectarine-trees.—The principal part of the disbudding of these trees having been performed, gross shoots should be cut or pinched back to a dormant bud or a well-placed lateral shoot, blistered leaves picked off and burnt, and where the shoots themselves are affected with the fungus *Eoacus*, they should be removed and burned. In most south country gardens the fruits of the Peach and Nectarine are plentiful, and are now developing apace, and a partial thinning may be carried out, taking first the early varieties, such as Waterloo and Hale's Early, and removing the badly-placed fruits and reducing the clusters to one or two fruits each. Further thinning may be done after the fruits have stoned. Trees which shed their fruit at that stage will usually be found to be suffering from dryness of the soil, and in any case no harm will accrue this year if the border receives a very copious application of water. A mulch laid on the soil to a width of 4 feet, measured outwards from the wall, should be applied, to a depth of 4 inches. It is of great advantage to these trees if they are well syringed night and morning.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bicton, East Budleigh, Devonshire.

Peas.—The last sowings for the season should be made within the next week, choosing such varieties as *No Plus Ultra*, *Criterion*, *Goldfinder*, *Autocrat*, and *St. Duthus*. Even in Devonshire we like to get them into the ground before midsummer day. Those who sow the early varieties for the latest crop may defer sowing for a fortnight; indeed we have had excellent results from sowings made on July 7 of *Autocrat*, but it is not safe to defer the sowing to so late a date; although in an autumn favourable to late Peas, I have been able to gather Peas so late as early November. Examine the soil where succession Peas are sown, and afford water copiously if the land be dry, and mulch the rows afterwards. Failure to do this will result

the loss of the crop through mildew. Slight attacks of mildew may be kept in check by dusting with flowers-of-sulphur when the tops are wet.

Celery.—Continue to place successional batches in the trenches, doing this before the plants get of a large size or crowded together. Afford water frequently in dry weather, and stir the soil between plants early planted. The latest plantings usually follow a crop of early Cabbages or Peas.

Cauliflower and Broccoli.—Since rain fell, although not more than $\frac{1}{2}$ inch in amount, these plants have made great headway. Where there is vacant ground, and it is suitable, no time should be lost in planting the early varieties. Let water be applied to the seed-beds or rows before lifting the plants, and again to the plants after being planted, unless the work is carried out in moist weather. A distance of 15 to 18 inches apart will suffice for the small early Cauliflowers; but Veitch's Autumn Giant, Pearl, and Eclipse, should be planted at the same distance apart as Broccoli, viz., 2 feet. Plants standing in nurse-beds will not spoil if they remain undisturbed for ten days or a longer period, and advantage should be taken of dull or showery weather to transplant them.

Carrots.—Sowing should now be made of Sutton's Gem, or Veitch's Model, for early winter use. Sow seeds of these two varieties in about a month, and the roots will usually turn out well. The roots from this sowing may be left in the ground till the end of February or early in March, being pulled from the beds as they are required.

Tomatoes.—Make out-of-door plants secure against the wind with ties and stakes or nails and shreds, remove all lateral shoots, and afford water before the land gets very dry. Tomato-plants grown under glass require similar treatment, and frequent applications of manure-water when the roots are confined to pots or boxes. Seed may now be sown for raising plants to fruit late in the autumn and early in the winter, sowing the seeds to the number of three in 3-inch pots, and placing these in a greenhouse. When large enough, remove all but one plant per pot; repot when necessary, afford full ventilation, and keep them near to the glass. The plants may be stood out-of-doors during the months of August and the first half of September.

FRUITS UNDER GLASS.

By MALCOLM MCINTYRE, Gardener to Sir CHAS. TENNANT, The Glen, Innerleithen, Peeblesshire.

Young Pot Vines.—Stop the canes of those intended for fruiting next season when they reach a length of from 6 to 8 feet, and subsequently pinch the laterals and sublaterals at the first joint. Young Vines it is intended to plant out may be allowed to make what growth they will, and be cut back to two or three eyes, or to the length required at planting time.

Vines which have fruited.—When all the fruit has been removed, syringe the trees occasionally, and afford water to the roots. Place a mulching of spent short manure over the surface of the border. Allow a moderate extension of the laterals, and admit air freely when the temperature is above 60°. Seek to prevent the premature ripening of the wood, and consequent fall of the leaves.

Houses of ripe Grapes.—Afford the Grapes a slight shade from hot sunshine by such means as a double thickness of herring-nets drawn over the roof glass. A good clean spread of foliage assists Black Hamburgs in keeping their colour. A moderate amount of atmospheric moisture will not injure the Grapes, if accompanied by free ventilation. A very little extension of the laterals will assist the retention of the principal leaves, and upon their continuance in health depends the proper ripening of the buds for next year's crop.

Grapes beginning to colour.—Admit a little air constantly, and afford sufficient heat in the water-pipes to maintain a night temperature of 65° and a day temperature of 70° to 75°, allowing 80° to 85° with sun-heat. Damp all surfaces in theinery occasionally, and do not allow the border to become dry. Vines ripening heavy crops may be assisted by sprinkling the border with Thomson's Vine-manure, and afterwards affording tepid water. Choose a fine day for this kind of work, so that the surface-moisture may evaporate before the evening. A light mulching of dry, spent manure may be spread over the border. If the atmosphere be allowed to become stagnant, the Grapes will most likely crack.

Late Grapes.—As soon as the berries are set, there must be no delay in thinning both the bunches and the berries. Nothing is so fatal to perfect finish as over-cropping. The varieties Lady Downes and Gros Colman require extra careful thinning if required to be kept until a late date. Large and highly coloured berries keep best; and crowded bunches are, as a rule, bad keepers. The aim should be to afford every berry sufficient room to swell perfectly, and no more, for loose bunches that show the footstalks when dished are not so pleasing, however fine the berries, as those that are more compact. Before thinning is commenced, tie down the laterals. Allow as much foliage to remain as can have exposure to the light, but when the space is fairly covered with leaves, keep the shoots closely pinched. If any of the old canes have grown with unsightly spurs, encourage a young rod from the base of the existing ones, allowing this to extend to about 10 feet before it is stopped. Keep the growths tied down away from the glass, and so prevent scorching. Vines extending must be allowed to make as much lateral growths as is practicable, always bearing in mind the wood which will produce the fruit next season should be afforded full exposure. The foliage should be rather more thinly distributed in the case of white Grapes than in black. This more particularly applies to Muscats, which of all Grapes require high elaboration of the sap to insure their assuming the rich golden-amber so much prized. Cold nights render fires still necessary in this part. All late Grapes thrive best in a high temperature, with abundant food, both at the roots and in the atmosphere. Maintain a night temperature of 65° to 70°, and 70° to 75° by day in dull weather. Admit air early in the morning, beginning with a little at the top of the house, and increasing the ventilation as the temperature becomes higher.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. I. MEASURES, Esq., Cambridge Lodge, Flodden Road, Camberwell.

Cattleya Warscewiczii (gigas).—In this species we have one of the most useful late summer-flowering Cattleyas when it can be induced to flower annually. When the treatment afforded is the same as that applied to other members of the labiata section, it does not usually flower so satisfactorily. There is one section indeed which will grow most vigorously for a number of years without ever showing a sign of flowering. Such plants should be discarded, and the free-flowering type procured instead. The latter succeeds when suspended near the roof-glass, or placed in such a position that it can obtain the maximum amount of strong light, and when these conditions are afforded, there is little difficulty experienced in flowering the plant. A matter of great importance is the prevention, so far as may be possible, of any second growth. If a plant commences to grow early in the season, it is a difficult matter indeed to prevent a late or second growth, for the plant naturally flowers early, and the hot, humid conditions maintained in the Cattleya-house to meet the requirements of plants that make their growth in the summer, naturally tends to produce an undesirable amount of vigour in *C. Warscewiczii*, and a second growth is started. In order to obviate this, remove the plants to a dryer and more airy house, and protect them from the sun's rays during the hottest parts of the day; the amount of moisture afforded at the root being reduced to just the quantity that will keep the pseudo-bulbs from unduly shrivelling. When second growths have appeared, the plants should be assisted to mature the same before the autumn, for unless fully ripened, they cannot be retained in a healthy condition during the winter season, especially in smoky, foggy parts, and the disease known as black spot is almost sure to affect them, and cause probably the loss of the plant.

Cattleya Dowiana aurea.—This species needs in many respects conditions similar to those under which *C. Warscewiczii* is best grown, but the plant does not commence to make its growth so early in the year, and is therefore not so liable to form a second growth. In order to flower the plant well, a long season of rest is necessary, and but little root-moisture should be applied at that season; and great discretion is required in affording water before the leaf commences to expand, and the sheath is observed within. Considerable warmth and moisture are needed in order to ripen the growth quickly. After flowering, the plant should be afforded cooler

treatment, but not be removed from the Cattleya-house. The old type of *C. Dowiana* is more beautiful than *C. D. aurea*, but it flowers less freely, and for that reason it is not so commonly grown. It is remarkable to note the differences existing in hybrids where the old type of *C. Dowiana* has been used as one of the parents, and in every instance which has come under my notice, these have been superior in every point to those obtained when *C. D. aurea* is one of the parents. It is advisable in hybridising to employ the Costa Rica type in preference to the other. These plants are liable whilst growing to be infested by black-thrips, and the plants should be closely examined; and when thrips are observed, they must be forthwith removed with a soft sponge, or they will soon cause permanent disfigurement.

THE FLOWER GARDEN.

By T. H. SLADE, Gardener to Lord POLTIMORE, Poltimore Park, Exeter.

Borders of Herbaceous Perennials.—Those plants which are passing out of flower should have the flower-stems removed, which will have the effect of inducing some of the plants to flower again in the autumn. Bulbs occupying ground required for other plants may be lifted, unless in the case of deeply-planted Tulips. The bulbs should be laid thinly out to dry in a frame or cool house. The leaves of those left in the borders should be removed as soon as they are withered, or in the case of Tulips, when the flower-stem can be bent round the finger without breaking. The shoots of shrubby varieties of Phlox should be thinned, and the strongest left. Phloxes should be mulched if the land be light or sandy, and Delphiniums should be treated in a similar manner. *Harpalum rigidum*, a showy plant, is one that spreads quickly, soon smothering weaker-growing plants, and it should be kept within moderate limits. *Campanula calycanthema* (Canterbury Bells) will soon be in full beauty—the plants are very attractive, either as clumps in the mixed border, or in a border to themselves. Do not put Canterbury Bells in parts of the garden to which hares and rabbits have access, these creatures taking to them with gusto. *C. pyramidalis* and *C. compacta*, the Syon House variety, are stately plants for putting into the borders, and they are now pushing up their flower-spikes; and if the plants are planted in partial shade, clumps of the white and pale blue-flowered varieties afford repose to the eye after gazing on masses of bright-coloured flowers. I grow them in 3-inch pots for planting out, and plant them when the flower-spikes are pushing up. Those required for indoor decoration are lifted, potted and placed in a shady position out of doors for about a week, syringing them overhead if the weather be bright. By this kind of treatment our plants attain to great vigour, and possess a great number of flower-spikes. Seed should be sown annually. The plant does not always flower the first season from seed, and any that fail should not be thrown away, as they will be stronger and better the second year. Plants in the mixed borders after the second year may be thrown away if a sufficient number of young ones are coming on. The flower-spikes of these plants, and other tall-growing species likely to be broken by wind, should be secured to stakes. The borders should be hoed and raked occasionally, and everything kept in a tidy manner. In showery weather sprinkle guano, or some other suitable fertiliser on the soil. These borders are not always deemed worthy of very liberal treatment, but it pays to use some kind of manure during the summer other than ordinary farmyard or stable-manure.

Routine Work.—From the present time, remove the flowers from all recently bedded-out plants, and thus enable the plants to get quickly established. Keep the beds stirred, and afford water if dry weather continues, and let the water, if drawn from wells and springs, be exposed to the air for some days before use.

"CASSELL'S DICTIONARY OF GARDENING."

This is a new candidate for popular favour, edited by Mr. WALTER P. WRIGHT. The first part is before us, and is nicely got up and prettily illustrated. Lists of the principal species are given. The cultural directions will be found serviceable. The "Spruce Fir," according to modern usage, is not synonymous with Abies. Most of the species here indicated are true Silver Firs.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, JUNE 18.—Royal Horticultural Society's Committee, Meeting.
Royal Oxfordshire Horticultural Society's Show, at Oxford.

THURSDAY, JUNE 20.—Linnean Society, Meeting.
Royal Botanic Society, Meeting.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick—61°4'.

ACTUAL TEMPERATURES:—

LONDON.—June 12 (6 P.M.): Max. 60°; Min. 49°.

June 13.—Squally, some rain, colder.

PROVINCES.—June 12 (6 P.M.): Max., 56°, southern counties: Min., 46°; N. E. Scotland.

Agricultural Returns.—THE Board of Agriculture has issued an official statement for the year 1900, showing the acreage and produce of crops, prices of corn, and number of live stock, with other agricultural statistics for the United Kingdom, British possessions, and foreign countries. It is needless to say what an important document this is to agriculturists, landowners and merchants. It may be had for a small sum from EYRE & SPOTTISWOODE, East Harding Street, Fleet Street.

In these columns we are specially interested in the figures relating to fruit-culture, from which we may make some extracts. Thus we find that in the whole of Great Britain, 73,780 acres are now devoted to small-fruit culture, and 232,129 acres to that of orchards. Kent is very far ahead of all other counties as regards the culture of small fruit, no fewer than 22,466 acres in this county being allotted to these crops.

In Middlesex, 4,231 acres are recorded as given up to small-fruit culture. Cambridge has 3,428 acres, and Worcester 3,634 under fruit culture. In the other counties a much smaller area is thus utilised, Rutlandshire, the smallest English county, having only 49 acres so made use of.

Turning to orchards, we find Devonshire heads the list with 27,240 acres, followed by Hereford with 26,847, Kent, 26,340; Somerset, 24,992; and Worcester, 21,023 acres. The other counties show very largely lessened proportions; Rutland again being lowest on the list with 98 acres only.

So far as imports go in the year 1900, we imported 2,128,477 cwt. of Apples of the value of £1,222,655. Of Oranges and Lemons we take no note, as their importation does not directly affect our cultivators; but we paid the foreigner £308,395 for Cherries, £595,000 for Grapes, £366,871 for Pears, and £392,696 for Plums. Taking fruits of all kinds, including

Bananas, the total value imported in 1900 was £6,481,562.

Potatoes to the amount of £2,232,342; Onions to that of £853,903; the total of vegetables of all kinds being £4,643,978.

The total of vegetable produce, including cereals, fruits, and vegetables, imported in the year under review amounted to £95,668,737, and the grand total of agricultural food products to £179,663,122, staggering figures which seem to point to the absolute necessity on our part of keeping the peace, and on that of our neighbours of humouring their best customer.

Another table shows that the proportional value, per head of the population, of fruit imported amounted to 3s. 9d. a head, that of vegetables to 2s. 3d.

Another table shows whence all these products are derived, thus the United States sent us 1,248,403 bushels of Apples, Belgium followed with 276,967 bushels, France 234,412, Holland 103,936, and Portugal 203,238, figures which seem to require explanation. Even Norway sent us 10 bushels of Apples. The total from all foreign countries was 2,109,152 bushels.

France sends by far the largest quantity of Cherries, viz., 195,883 bushels. Belgium contributes 15,113 bushels of Grapes, double what France sends us; while Portugal is far in advance of all other countries in its export of Grapes to Britain, the total quantity being 892,574 bushels. France sends us 315,610 bushels of Plums, Germany 191,021, and the United States 8,862 bushels.

The largest exporter of Potatoes to this country is France, who contributes 1,749,686 cwt., Belgium 731,737 cwt., Holland 311,694 cwt., and so on, till we come to Madeira at the bottom of the list with 75 cwt.

The total quantity of Apples imported from our colonies was 1,752,020, by far the largest quantity coming from Canada, viz., 1,549,951; while Tasmania sent 154,713 bushels, and the whole of the Australasian colonies (inclusive of New Zealand and Tasmania), 172,371 bushels.

Of seeds, 13,098 tons of Clover and grass seeds were imported, valued at £508,913; and (in 1899) 2,039,204 lb. of "garden seeds," of the value of £65,481.

Timber of all descriptions was introduced to the amount of £39,179,037.

The few extracts we have made are in number infinitesimal as compared to the whole, and on scanning these 256 pages of figures, and noting our cwt.s, bushels, tons, and the like, and remembering the time and labour that must have been expended in reducing the orderly metrical values used in other countries to our incoherent and utterly stupid weights and measurements, we are astonished that common sense has not long ago introduced a more rational method.

CORYPHA AUSTRALIS (see Supplementary Illustration).—This Palm, which should more properly be called *Livingtonia australis*, is rarely seen as an out-of-door plant, but how effective it is when circumstances permit of its growth is shown by our illustration, taken by Mr. MEYER, from a plant growing at Penjerriek in Cornwall.

THE SYDNEY BOTANIC GARDENS.—We are pleased to be able to lay before our readers two views of the gardens so long presided over by Mr. CHARLES MOORE, and now under the management of Mr. J. H. MAIDEN. The Gardens were visited by the Duke and Duchess of CORNWALL on their recent visit to Sydney. The Gardens occupy the site where a settlement was first made, now more than a century ago. We may revert to the subject in a future issue.

LINNEAN SOCIETY.—On the occasion of the evening meeting to be held on Thursday, June 20, 1901, at 8 P.M., the following papers will be read: I. "On the Freshwater Algae of Ceylon," by Messrs. W. WEST, F.L.S., and G. S. WEST, F.L.S., &c. II. "On Coprophilous Fungi," by Messrs. GEORGE MASSEE, F.L.S., and E. SALMON, F.L.S., &c. III. "Revision of the Genus *Hypericophyllum*, Steetz, with Notes on Certain Genera with which it has been Confused," by Mr. N. E. BROWN, A.L.S., &c.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees will be held on Tuesday, June 18, in the Drill Hall, Buckingham Gate, Westminster, when a lecture on "Gardening in the London Parks" will be given by Mr. M. J. WHEATLEY, at 3 o'clock.

BOTANICAL MAGAZINE.—The June number contains illustrations of the following plants:—

Crinum rhodanthum, Baker, t. 7777-S.—A very beautiful Crinum, with numerous flowers in a globose head. The rosy-lilac flowers have a long narrow tube, about 3 inches long, with narrow, recurved segments, about 2½ inches long. It is a native of Ngamiland, in the very heart of Africa. Though so near the centre of Africa, the flora, as made known by Captain and Mrs. Lugard, is stated to approximate to that of South Africa. The bulb that flowered at Kew was presented by Mrs. Lugard.

Beschorneria Wrightii, Hook. f., t. 7779.—The short, thick trunk bears a tuft of lanceolate leaves, finely toothed at the margins, and measuring 4 to 5 feet in length. From the centre of the tuft rises a tall panicle, 8 feet high, bearing, at intervals, tufts of greenish, tubular, hairy flowers, each about 2 inches long. It is supposed to be of Mexican origin, and flowered in the temperate-house at Kew. It is dedicated to Mr. C. H. Wright, one of the assistants in the Kew herbarium.

Calanthe madagascariensis, Rolfe, t. 7780.—A near ally of *C. veratrifolia*, differing in the undulate leaves, broader sepals and petals, and the more warted lip. It was introduced from Madagascar by Mr. Warpur.

Nymphæa flavo-virens, Lehmann, t. 7781.—A pretty tropical or subtropical species, allied to *N. gracilis*. It has linear-lanceolate, whitish petals, and mucronate yellow anthers. The plant is supposed to come from Mexico.

PICCADILLY AND CITY RAILWAY.—A proposal has been made for the construction of an electric railway, or railways, from Piccadilly Circus (where it will join the line to Brompton) passing along the Strand to Gracechurch Street, and thence due north through Kingsland and Dalston, to Tottenham, with an easterly extension through Clapton, Manor Road, Walthamstow and Chingford. A glance at the map suffices to show what a boon a railway uniting the northern and eastern suburbs to the West-end would be. Through London the rail will run in a tube, but in Leyton and Walthamstow it will be an open-air line. The line would be of very great service to those whose business takes them to the Strand and Fleet Street, including Covent Garden Market, the Law Courts, &c. The traffic along this line is ceaseless, day and night. We desire especially to call the attention of those who use Covent Garden Market to this proposed line, which will open up large market garden areas, and must prove of great assistance to frequenters of the Market.

WEATHER-LORE FOR JUNE:

"If St. Vitus' day be rainy weather,
It will rain for thirty days together."

"If on the 8th of June it rain,
It foretells a wet harvest, men sain."

"Calm weather in June,
Sets Corn in tune."

J. C., June 15.

ROYAL BOTANIC SOCIETY OF LONDON.—The secretary desires us to inform our readers that a course of ten lectures on "Commercial Crop Cultivation in Greater Britain," by Mr. R. HEDGER-WALLACE, will take place in the Society's Gardens, Regent's Park, on Friday afternoons, at 4 o'clock, to August 9. Sir GEORGE WM. KEKEWICH, K.C.B., Secretary of the Board of Education, took the chair at the introductory lecture on Friday, June 7. His Majesty the KING has graciously consented to become the Patron of the Royal Botanic Society in succession to her late Majesty QUEEN VICTORIA, its first Patron.

courteous manner and kindly disposition he had endeared himself to a large circle of friends, the gardening portion of which had met that night to give expression to the high esteem in which they held him. In handing him the watch, he could assure him that there went with it the best wishes of all his floral friends, who hoped that his married life would be one of happiness and prosperity. Mr. MACFEE, in accepting the gift, replied in suitable terms, giving a *résumé* of the history of the Society, and stating that it was twenty-six years since he became connected with it, and most of the time in the capacities of Secretary and Treasurer.

and its relation to the "environment." For this purpose the commonest plants answer the purpose as well or better than the rarest. The teachers of the Essex Technical Instruction Committee have done, and are doing, such excellent work, that they may safely be trusted to protect rather than to injure the objects of their study.

"BULLETIN DE LA SOCIÉTÉ FRANÇAISE D'HORTICULTURE DE LONDRES"—Année 1900 (au Siège de la Société, 66, Long Acre, W.C.). This publication opens with a memoir and excellent portrait of the late Mr. JOHN LAING, and includes also



FIG. 146.—BOTANIC GARDENS, SYDNEY, LOOKING ACROSS FARM COVE TO GOVERNMENT HOUSE, WHICH IS SEEN IN THE DISTANCE.

PRESENTATION.—On Thursday evening, June 6, a large representative gathering of the members of the Paisley Horticultural Society took place in the Globe Hotel, Paisley, to do honour to the Secretary and Treasurer, Mr. ROBERT MACFEE, on the occasion of his approaching marriage. Most of the gardeners of the district were present, including Mr. REID, Superintendent Broomlands Cemetery (Chairman). The Chairman called on Mr. MCHARDY to make the presentation of a gold watch to Mr. MACFEE. He spoke of the deep sense of obligation their Society and the flower-loving public were under to Mr. MACFEE for his long and valuable services as Secretary and Treasurer. The prosperity of the Society was largely due, he said, to his untiring energy and able management. By his

THE RAID IN THE NEW FOREST.—Of late years the study of "ecology" has come to the front. The name is new, but the thing is as old as the time of LINNÆUS, and simply refers to the vegetation of different districts, according as they are mountainous, boggy, maritime, sandy, calcareous, and so forth. A party of teachers, in the course of their training, is to be taken to the New Forest, for the purpose of studying the association of plants according to variations in circumstances. Some excellent friends have taken alarm at these proceedings, and consider that the rare plants of the Forest are in danger. The schedule before us says nothing about rare plants, and is quite harmless. It simply serves to draw the attention of the students to the general appearance of the plant,

(besides reports of the Society) papers on Voyage du Congo, by M. LOUIS GENTIL; Culture des Rosiers forcés en pots, by M. P. LANIERI; Plantes alpines et leurs Jardins, by M. L. RECORDON (Kew); Propagation de l'Adiantum Farleyense, by G. A. ROCHAT, and other articles of equal interest. There is an extract from a contribution of M. LÉON CLERC, respecting the position of young French gardeners in England, which those intending to visit our shores would do well to study. That the streets of London are not paved with gold, and that the supply of untrained British gardeners is already in excess of the demand, should be considered by foreigners before they decide to come over here and enter into competition with an already over numerous and poorly-paid class.

SASA BOREALIS.—The Bamboo cultivated in British gardens as *Bambusa senanensis* is now called *Sasa borealis* by the Japanese botanists, T. MAKINO and K. SHIBATA. These gentlemen consider that in floral structure, habit, internal conformation, this species should form the type of a new genus. To this genus are also referred *Bambusa* or *Sasa albo-marginata*, the *Arundinaria Veitchii* of gardens; *Sasa paniculata*, the *Bambusa palmata* of MARILLAC, and of BEAN in the *Gardeners' Chronicle*, 1894, p. 167, fig. 18; *Sasa tessellata*, the *Bambusa tessellata* of MUNRO and of BROWN, in *Gardeners' Chronicle*, v., 1889, p. 521; and BEAN, in *Gardeners' Chronicle*, xv., MITFORD, *Bamboo Garden*, p. 82; *Bambusa Ragamowski*, WHEELER, in *Gardeners' Chronicle*, vi., 1876, p. 847, and vii., 1877, p. 50. The Japanese botanists consider that the root structure will serve hereafter along with the floral characters the purpose of a rational classification of the *Bambuseæ*. The paper in which the views of Messrs. MAKINO and SHIBATA are put forth is contained in the *Botanical Magazine* (Tokyo), vol. xv., 168 (1901).

YORKSHIRE NATURALISTS' UNION.—The 158th meeting will be held at Wykeham, near Scarborough, for the investigation of Yedmandale, Beedale, and Sawdondale, on Saturday, June 22, 1901. Through return tickets at pleasure-party rates will be issued at all stations on the G.C., G.N., H. & B., L. & Y., L. & N.W., Midland, and N.E. railways, which have booking arrangements for Scarborough, Seamer, or Wykeham, to members and associates showing their signed card of membership at North-Eastern stations, or (at other companies' stations) surrendering the certificate noted below. Tickets taken on Friday, June 21, or Saturday, June 22, will be available for return any day up to Monday, June 24. Where through bookings are not in operation, members may book to most convenient junction, and re-book to destination; the reduced fares being available for each stage of the journey. The N.E.R. Company issue week-end return tickets at single fare to above stations. Permission is kindly granted by the Right Hon. Viscount DOWNE to go over his Wykeham estates; the Right Hon. the Earl of LONDSEBOROUGH, and Sir CHARLES LEGARD, Bart., for Seamer and Ganton Carrs.

Week-end arrangements.—The headquarters will be at the Downe Arms Hotel, Wykeham, R.S.O., York. The botanical section will be officially represented by Mr. M. B. SLATER, F.L.S., and Mr. C. WATERFALL. The Hon. Secretaries are W. D. ROEBUCK, Esq., 259, Hyde Park Road, Leeds; and E. HAWKSWORTH, Esq., Goodman Street, Hunslet, Leeds.

"SCIENTIFIC PAPERS AND LETTERS," by A. H. SMEE. This is a reprint of various papers, chiefly on chemical subjects, issued by Mr. A. H. SMEE. A paper which will interest Orchid-growers is that on the chemical composition of Orchids. Mr. SMEE narrates how he experimented upon an old and starved variety of *Cattleya Trianaei*. He fed this plant once a week during the growing season with 2 to 3 oz. of water containing nitrate of potash, nitrate of ammonia, at the rate of half an ounce, together with small portions of phosphate of ammonia and carbonate of magnesia. The effects were so satisfactory, that in 1896 Mr. SMEE added nitrate of potash and nitrate of ammonia, at the rate of 2.5 grains per gallon each week to the rain-water tanks of the *Cattleya*-house.

TEMPLE SHOW.—Mr. W. H. YOUNG informs us the Royal Horticultural Society's Council have decided to award a Gold Medal to Sir F. WIGAN, Bart., Clare Lawn, East Sheen, for the group of Orchids exhibited by him at the late Temple Show.

PEACH DUCHESS OF CORNWALL.—This Peach was inadvertently returned to the press at the last Drill Hall meeting as having received an Award of Merit. What happened was, that the Messrs.

RIVERS sent up a dish of Duchess of York fruits (Award of Merit at the Temple show), and asked the Committee's advice as to what should be done, seeing that it had been found since the Temple show that there was a Peach already in existence under the same name, Mr. RIVERS having obtained an Award of Merit for it some few years since. It was said the variety had not been put into commerce, and therefore the name Duchess of York might stand. That, however, the committee could not sanction, as there would in that case be in their list of awards two Peaches of the same name. The suggestion that the variety be henceforth known as Duchess of Cornwall was adopted, and the award made to it at the Temple Show stands good.

STOCK-TAKING: MAY.—There is no comparison between the figures for the month of May last and those for the same period last year, by reason that the Whitsun holidays were held in June of 1900; only a record can be made of the quantities or values as the case may be. The imports for last month, according to the Trade and Navigation Returns, are £42,426,759 against £43,876,427—difference £1,449,668. The results taken from the "summary" table are as follows:

IMPORTS.	1900.	1901.	Difference.
	£	£	£
Total value ...	43,876,427	42,426,759	-1,449,668
(A.) Articles of food and drink—duty free ...	13,088,123	12,888,010	-200,113
(B.) Articles of food & drink—dutiable ...	3,553,611	3,127,365	-426,246
Raw materials for textile manufactures ...	6,975,192	6,703,664	-181,528
Raw materials for sundry industries and manufactures ...	4,948,216	5,023,837	+75,621
(A.) Miscellaneous articles ...	1,396,407	1,245,479	-140,928
(B.) Parcel Post ...	93,469	124,548	+26,079

As was expected, sugar shows a falling off, simply because of the previous rush to enter before the imposition of the new tax; whilst some cereals are under average. Other food supplies from various colonies and America have gone up; and sawn timber has increased. The items relating to fruits, roots, and vegetables, are, as usual, interesting, and as follows:—

IMPORTS.	1900.	1901.	Difference.
	Cwt.	Cwt.	Cwt.
Fruits, raw:—			
Apples ...	67,325	75,842	+8,517
Apricots and Peaches ...	334	155	-179
Bananas... bunches ...	157,304	223,939	+66,635
Cherries ...	11,279	5,237	-6,042
Gooseberries ...	1,105	328	-777
Grapes ...	1,462	936	-526
Lemons ...	86,704	149,715	+63,011
Nuts—Almonds ...	4,711	5,498	+787
Others, used as fruit ...	47,780	46,270	-1,510
Oranges ...	333,947	532,850	+198,903
Pears ...	33	165	+132
Plums ...	...	...	...
Strawberries ...	4,619	3,255	-1,364
Unenumerated, raw ...	4,465	4,548	+83
Dried fruit:—			
Currents, home consumption ...	45,482	43,005	-2,477
Raisins, do. ...	17,945	18,399	+454
Vegetables, raw:—			
Onions ... bush.	604,950	602,219	-2,731
Potatoes ... cwt.	863,278	1,037,217	+173,939
Tomatoes ...	47,109	31,500	-15,609
Vegetables, raw, unenumerated ... value	£32,225	£61,596	—£29,371

Here it may not be uninteresting to note, for the benefit of the speculative grower, that last year a

large quantity of French Prunes were imported by us for home consumption and exported to our customers abroad. Why these should have to be imported in the face of our frequent glut of Plums we cannot conceive. The imports for the five months just ended show a total value of £220,821,835 against £213,749,770 for the same period last year, or an increase of £7,072,065. In the matter of—

EXPORTS

there is a falling off to report, but that also is subject to the modifying holiday influence. The month's trade is placed at some £23,556,712 against £24,715,930—a decrease of £1,159,218. Coal is the disturbing element—that had to wait on the Chancellor of the Exchequer; and the export is in excess of last year's, but at a lower rate per ton. As an added consequence, the price of coal supplied to the gardening world has been lowered to an appreciable extent, and thus the "disturbance" will have proved to it and other "interests" a welcome one. "Villainous saltpetre" and its accessories figure too largely in the returns to be a pleasant item. The value of exports for the past five months foots up at £116,356,024 against £119,481,429—showing a decrease of £3,125,405.

FLOWERS IN SEASON.—We have been favoured by Messrs. J. VEITCH & SONS, Royal Exotic Nurseries, Chelsea, with specimens of a number of varieties of *Aquilegias* (Columbines), displaying very pleasing tints and great size. There were those with blue-coloured sepals and spurs, having white petals, and various shades of yellow, some possessing the attraction of faintly purple tinted blotches at the base of the petals. Others had pink-coloured sepals and spurs, and petals either white, lemon-yellow, or very pale yellow, the latter with pale pink blotches on the petals, as in the case of those previously mentioned. Some others were almost entirely white, excepting for a faint bluish tint at the tips of the sepals and on the spurs. The flowers measured 2½ inches in width, and the length of the spurs, a very distinctive feature in these flowers, measured, on an average, 2 inches. We have no more elegant, graceful flowers for beds and borders at this season than *Aquilegia cerulea hybrida*. The plants grow from 2½ to 3 feet.

—The double and single-flowered varieties of *Pyrethrum roseum* have made the hardy flower garden exceedingly gay of late, in situations where the absence of rain can be better withstood than in others. *P. roseum* is an excellent garden plant, requires little looking after, blooms exceptionally freely, and the flowers when cut will last a very considerable period if put into water; and afforded the usual care that is requisite to preserve any flowers after their removal from the plant. We have received a box of beautiful blooms from Messrs. KELWAY & SONS, Langport, Somerset, in which the following varieties were represented:—Taking the doubles first, there were Ernest and Melton, crimson; Lady Kildare, pale pink with yellow centre; Empress Queen, very large, nearly white; Queen Sophia, mauve; Cleopatra, large, scarcely tinted, with yellow centre; Pericles, pale yellow, the long ray florets tinted pink; Ovid, red; Lord Rosebery, rich bright crimson; Alfred, also crimson; and Lady Randolph Churchill, white, with fringed florets. The single flowers included Alice, colour lilac-rose; Queen of the Whites, with yellow-tinted centre; General Gaselee, reddish-purple; Grizzle, rose colour, with prominent yellow disc; James Kelway, an excellent crimson flower; Countess of Onslow, white, tinted with flesh-pink; and Princess of Wales, a good rose-coloured variety.

BAGSHOT RHODODENDRONS.—Again this season the firm of JOHN WATERER & SONS, Ltd., of the Bagshot Nurseries, Surrey, are making a Rhododendron display in the gardens of the Royal Botanic Society, Regent's Park. Those, therefore, who desire to see a representative collection of this most useful of all flowering shrubs may do so during

a visit to London, without having occasion to travel into any of the more or less remote districts of Surrey. The display was visited by a large number of invited persons on Monday last, the opening day, when the plants, having just opened their first flowers, looked fresh and attractive. We have many times remarked upon the ease with which Rhododendrons may be transplanted, after it is seen which plants have the most flower-buds upon them, and this annual show of Messrs. WATERER'S affords striking evidence of this fact, for some of the specimens are of considerable size,

were other good varieties, and some of them are well known. It will suffice if we mention a few only:—Kate Waterer, rose-coloured, with green spots on a white ground; Lady Clementine Walsh, very large flower of palest pink colour, with green spotting; W. E. Gladstone, rich rose colour, with greenish spots; Madame Carvallis, white, with pale pink, blush, and yellowish green spotting; Mum, a white, much expanded flower, with green spotting; Michael Waterer, rich red in colour, with almost black spots, one of the very best in form, colour, and

BOOK NOTICE.

PLUMS AND PLUM CULTURE: A Monograph of the Plums Cultivated and Indigenous to North America, with a complete account of their Propagation, Cultivation, and Utilisation. By F. A. Waugh (New York, 1901).

AN American work of some 360 pages. It contains a good number of illustrations of the different varieties grown by our cousins across the Atlantic. There is also a good index to the different subjects



FIG. 147.—BOTANIC GARDENS, SYDNEY: THE MAIN WALK AS SEEN FROM THE PRINCIPAL ENTRANCE.
TREE OF GREVILLEA ROBUSTA; SILK OAK ON THE LEFT-HAND SIDE. (SEE P. 387.)

and they bloom well, and appear to be quite established in their quarters, though it is well known that this is not so. The present season has not been one of the best for Rhododendrons; the dry weather has hurried them into flower, and the soil has not afforded the amount of moisture that these plants need at such a time. It is probably this circumstance which explains the absence from the collection of the lovely variety Pink Pearl, which we illustrated in the spring of 1899, and which is one of the very best of these hardy Rhododendrons. It is succeeding well enough in the open, but in a season like the present it has a tendency to bloom earlier than the others. But there

habit; John Waterer, intense carmine, very large; and Duchess of Connaught, white, with yellow markings. There were several plants of the variety Gomez Waterer, shown in 7-inch pots, and hardly more than 1 foot in height. These little table plants bore huge trusses of flowers, and attracted much attention. The variety is pale pink in colour, and a very desirable one. In addition to these and the bush Rhododendrons, there were standards and other trained plants, also a pretty group of *Kalmia latifolia* in pink and white varieties. These *Kalmias* are very beautiful, but they should be afforded a peaty soil always. The show will remain open for several weeks longer.

treated of in this well-got-up volume, which will prove useful for reference. A catalogue of varieties is also given, with a list of synonyms in italics. English readers will notice such well known words as Belle de Septembre, Blue Imperatrice, Magnum Bonum, Bryanston Gage, Coe's Golden Drop, Oallia's Golden Gage, Pond's Seedling, Prince Eaglebert, Purple Gage, Reine Claude de Bavay, Victoria, and many others which are grown in this country. A great many of the varieties mentioned are unknown in this country. There is a chapter on Systematic Pomology, which, according to the writer, has fallen into neglect in America since the time of Wilder, Dowling, and Warder. In

this connection a portrait is produced of S. A. Willard, a leading cultivator of Plums in the United States. An article on Plum Botany is full of interest; and in this section is given a portrait of the venerable-looking J. W. Keer, of Maryland, a prominent authority on indigenous and Japanese Plums. To horticultural readers an article on domestic Plums is very interesting. In this group of varieties will be found some of our best known Gages. Such types as Golden Drop, Grand Duke, Magnum Bonum, or yellow Egg Plum as it is here called. A few remarks are made on Prunes. It is said that horticulturists are now, and always have been, much at variance as to what should be called a Prune. From personal observation made on the spot, at Agen in the south of France, we consider the Prune d'Agen to be the same as the true Prune grown in this country. It is grown all over the south of France, where it delights in a strong, chalky loam, which, with the hot sun of the south, turns almost white and very hard.

The Damson also comes in for a share of attention, and an illustration is given of a Bullace, which is, no doubt, correctly stated as being evidently a Damson. Another figure is produced of the European Sloe, *Prunus spinosa*, a possible progenitor of the Damson and of *Prunus domestica*. The Chicasaw Plum is grown along the line from Kentucky, and through the southern Atlantic gulf States, and widely distributed. The fruit of this Plum is used for making jellies and preserves.

Hybrid Plums are treated of, and a portrait given of Luther Burbank of California, a famous breeder and originator of many fine Plums. An interesting article is given on the Damson group of Plums, named and described. The Cluster Damson here mentioned is no doubt our Kentish or Farleigh; it is undoubtedly one of the most prolific of all Damsons. The Shropshire is also figured, and to all appearance it is the same as is grown in this country under that name. Japanese Plums are treated of, but these are not yet grown to any extent here, and we doubt if they will be hardy enough for our climate. It is always an interesting subject to know how our neighbours produce the enormous quantities of plants to supply the demands made by the ever increasing orchards. The propagation of Plums, both by sowing seed, by grafting, and by suckers and layers, is fully treated. It is asserted that any Plum that will grow from cuttings will grow from layers.

Budding and grafting, both whip and side-grafting, are fully described. Several interesting illustrations are given to show how the operations may be performed, and also the best season for effecting them. In order to give some idea of the scope of this work on the subjects treated of in its pages, let the following remarks from p. 241 speak for themselves:—

"Plum-trees may be top-worked exactly as Apple-trees are. The new scions may be set in the old tops either as buds in late summer, or as grafts in early spring. Grafting must always be done before the leaves start. The insertion may be by the cleft methods, or by any other scheme which the operator may fancy. The usual way is to set the grafts in a cleft, just as they are commonly set in Apple-tree tops. Top-working offers a convenient method of filling up tops broken down by winds or by over-bearing. It may be used to change wild or unprofitable trees over to better varieties, or it may be employed to improve imperfect pollination. It is especially convenient for testing new varieties, and it is the use to which it is most put among Plum enthusiasts. Almost every one of the Plum cranks has a little test orchard in which the old tops of some discarded trees are cut and patched all over with the scions sent by fellow victims of the craze. Such a garden is usually a frightful looking place. It suggests a horticultural hospital for the severely wounded. But this is where the Plum crank revels. Here he cultivates his imagination, and here he breathes in the inspiration of the collector and the connoisseur."

Here is another quotation from the same part of the book:—"I know one man who is very successful in the garden culture of Plums, who uses a garden-rake by hand for stirring the surface soil. Another friend tells of visiting this Plum-grower one day, and of seeing a cat run through the garden, whereupon the Plum man seized the garden rake, and followed after to rake up the cat's tracks. This man makes money from his Plums."

The method recommended for marketing is somewhat different to that in use in this country. The fruit is brought to the packing-house, and there it is sorted and graded, and then placed in the packages that are to be sent to market. When the usual quantity is about 100 tons to be handled, it would prove a heavy job to pack it all thus. A good few remarks are made on pollination, a subject not much understood at present, but which may yet play an important part in Plum-growing. A chart is given on this subject, and much interesting matter, together with a blossoming chart. Some interesting matter is given on the diseases of Plums, and also on insects and other enemies. Plum-trees are also recommended as ornamental plants. Altogether this work contains much useful information regarding the Plum, and to all who are interested in this subject it is well worth careful study.

THE CULTIVATION OF VEGETABLES IN FRAMES.

VEGETABLES slowly forced in garden frames come in most usefully at a season when choice vegetables are few, that is, just before the out-of-door crops turn in. Some persons assert that vegetables which are forced out of season lack flavour; but as regards this point, much depends upon the sort of forcing employed, and on the weather. Some kinds of vegetables are improved by being grown under glass, if the methods pursued are suitable. Some vegetables—as, for example, *Seakale*—do not require protection under glass, it being enough to mould it up with soil. It is then a most valuable vegetable during May, and is superior to any which is forced in heat. In the matter of late *Seakale*, to retard it may be a better term than to force it, as by covering the crowns in March with a good body of soil growth is checked.

There is a demand in most establishments for early, small heads of Cauliflowers, and Cauliflowers grown in frames fill the often unavoidable gap between the Broccoli and the out-of-doors Cauliflower season. Excellent Cauliflowers may be grown in sunken pits, and in pits with turfen walls, and covered at night or in frosty weather with hurdles thatched with straw or heather. Many good gardeners sow Cauliflower seed in heat early in the month of January for May and June supplies, sowing Veitch's Forcing or The Snowball; but I find autumn-sown plants give much less trouble. I am partial to the varieties Sutton's First Crop and Dwarf Early Erfurt, which I sow in mid or late September, according to the season, and plant out the seedlings late in the month of October or early in November; or I have them potted, and protected against hard frost. The plants are set out in the frames in the month of February, and between each two rows of plants that are planted in November Lettuces are sown, which are thinned out and the thinnings planted early in the spring, at which time the space is needed by the Cauliflowers.

Frames afford better results than pots, and if a dwarf variety be chosen, the plants may stand at 15 inches apart. When planting in February, Radish seed is sown in drills drawn between the rows of Cauliflower plants, which get cleared off before the space is required by the main crop. A few plants should be kept in reserve, in the case of losses. The soil should be well manured, and not of a very heavy nature.

FRENCH BEANS.

At Syon, the daily requirements in the matter of French or Runner Beans are always heavy, and

with all possible attention the returns from the plants from December to March cannot be termed profitable; indeed, during mid-winter the plants give a lot of trouble, for which the returns are not commensurate. For furnishing a supply in late spring, seeds are sown in 48's at the end of the month of March, in frames, and the plants set out a month later. It is not necessary to sow French Beans in pots, but all of the frames are not vacant at that time; moreover, the greater warmth of the soil in the pots favours germination. The frames are closed early in the afternoon, after syringing the plants, and the lights covered with mats on cold nights. The plants soon show flower, and by manuring them freely the plants generally last in a bearing state till the end of the month of June; and few vegetables are more profitable, forced Beans being scarce at that period.

Beans in frames do not suffer much from their common enemies, thrips and red-spider, so troublesome in hot, dry glasshouses. Veitch's Early Favourite is an excellent variety. G. Wythes.

(To be continued.)

HOME CORRESPONDENCE.

AFFORDING WATER TO PLANTS GROWING IN POTS.—Affording water at the right moment to plants growing in pots is a very important operation, and next in importance to the drainage afforded the pots. These two factors should go hand in hand, for if the attention as regards affording water be of the most careful kind, if the pots are not properly drained, good results will not be obtained. To give dribbles of water is a pernicious method for plants grown in pots. Whether they are in a glasshouse or in the dwelling, a daily examination should be made, and those that are in need of water should receive sufficient to thoroughly moisten the whole mass of soil. Hard-and-fast rules cannot be laid down, for the frequency of applications of water depends so much upon the conditions under which the plants are growing—whether in a dry, buoyant atmosphere or a humid one; also whether the plant is a moisture-loving subject or otherwise. Extra care in applying water is essential in the spring months, for at that time many kinds of plants are shifted into fresh compost and larger pots. If water be applied freely at this season, the soil becomes waterlogged and soured, and the roots do not ramble in it, the consequence being unhealthy plants for the season; for unless the roots act in unison with the top-growth, only unsatisfactory results can be expected. If the conditions of a glasshouse, &c., are wholesome and conducive to health, plants will need water rather often; but if the air is stagnant and moist, the soil will not dry out quickly, and the plants will not thrive. H. T. Martin.

THE NATIONAL DAHLIA SOCIETY.—Although this Society has made its arrangements for the holding of the annual Dahlia exhibition at the Crystal Palace as usual in September next, it seems as if its relations to the Palace Company were not of the happiest, seeing that the grant of £50 promised by the company to the Society for its last year's show yet remains unpaid, although frequent applications for payment have been made. Seeing that the directors recently presented to their shareholders a somewhat optimistic report and financial statement, it is all the more surprising that so much difficulty should have been raised over the payment of so small a bonus as £50. The sum is, however, not only due to the Dahlia Society, but is of first-class importance, as that sum is really due in the form of prizes won last September by competitors, and who have a strong legal demand against the committee. So grave had the matter become in the eyes of the chief officials, that a special meeting of the Dahlia Society's committee was held at the Windsor Hotel by kind permission of the Horticultural Club on the 1st inst. to take the subject into consideration, and it was after much discussion resolved that renewed application be made at once, and if the money was not paid within a given time, then the matter was to be placed in a solicitor's hands. The matter was necessarily a painful one, as the committee were most anxious to work in entire harmony with the

Crystal Palace Company. Judges for the ensuing show were also appointed, and special arrangements made to ensure more privacy in making the seedling awards than was furnished to the committee last year. X.

CYANIDE GAS FOR THE DESTRUCTION OF INSECTS.—In case you should think it would interest some of your readers, I send you copy of a note in my diary relating to my experiment last week with cyanide gas. I regard the result as perfectly satisfactory. The note in my diary was made the day after the experiment, but since then I am satisfied that all the live *Cattleya*-scale on the plants treated is killed. I intend, however, shortly to repeat the fumigation in the same house, in the hope of thereby settling any insects which may have developed from eggs since the first trial; and also I shall treat all the houses throughout in the same manner. If proper precautions are used, there is, in my opinion, absolutely no risk in using this gas. In this instance, I imagine that success was greatly owing to the precautions taken for closing up all apertures by which the gas could escape before it had done its work effectively. Maidenhair and other Ferns growing under the back stage were entirely uninjured. *J. Foster Alcock*—[“Friday, May 24, 1901.”—Used cyanide gas in bothouse (estimated cubical capacity 1250); materials 19 oz. water (cold), 6½ oz. sulphuric acid, 4 oz. cyanide potassium. Used a puddling-basin; water first, then the acid poured in, and then the cyanide, in tissue paper, suspended from a string through a hole in the rafter, dropped in from the outside. Temperature 63°. Wind N. All ventilators, top and bottom and front sashes, and doors were closed up by pasting newspaper over the apertures. Time, 9.15 P.M. At 10, opened from outside top and bottom ventilators; at 11, closed them again for the night. Next morning opened all ventilators and doors for an hour before going into the house. Result:—All mealy-bug, black and white scale (stock-seed scale?) on *Cypripediums*, and black and green-fly (latter on a dozen *Chrysanthemum* plants which had been put in the house) absolutely killed. No injury to plants or to *Cattleyas* and *Cypripediums* in flower; but some of the *Gloriosa* flowers on roof were slightly injured. Could not make out whether or not the scale on *Cattleyas* and *Dendrobis* was killed; in neither of them under the microscope was any movement perceptible; but neither was there in the live insects taken off other plants (*Cattleyas*—I omitted to examine live scale off *Dendrobis*). House quite dry when the gas was used; well aired just previously, and no water used during the day, so that foliage and stages were quite dry. Tank under front stage had been emptied and dried; all fire-heat had been shut off some hours previously.”]

SALPIGLOSSIS IN POTS, ETC.—One of the prettiest flowers I have ever seen in pots is the well known old annual *Salpiglossis*. I sowed a few pots early in the season by way of an experiment, and all through the month of May we have had a charming show of most beautiful flowers. I have never heard of anyone having attempted to force these plants. They are much admired, and as decorative subjects they are very fine. I send a few flowers for your inspection. [Truly very fine. Ed.] Were they some special up-to-date introduction they would, without doubt, create a perfect *furor*; of course, these flowers arranged with Sweet Pea and *Nasturtium* blooms make one think of out door gardening. It may not be generally known that a lovely show may be had of nearly all the varieties of both Sweet Pea and *Nasturtium* during the early spring months. The latter may be allowed to ramble over the roof and up pillars, or may be trailed amongst the pots on the stages. There are plenty of things grown much less useful as cut flowers than either of the above. A very deep red-coloured *Nasturtium*, a seedling, created quite a sensation at a party in the winter when observed in conjunction with Lily of the Valley, so much so, that plants were at once sought after. We propagate the stock by cuttings, but for variety sake grow a few seedlings, and upon one of these this season we had six different coloured flowers, and of most extraordinary colour. *W. A. Cook, Compton Bassett Gardens.*

OLD SEED.—Doubtless many of your readers have been much interested in reading the letter from Mr. John Pope which appeared in your last week's issue. One constantly hears it stated that vegetables of certain kinds can be grown better from old seed than from new; but it is very seldom,

if ever, that such statements are supported by evidence which is absolutely conclusive. No one would think of doubting Mr. Pope's statement that excellent Cabbages were produced from the six-year-old seed; but this is no proof that their excellence was due to the age of the seed. To make a trial from which reliable deductions could be drawn, it would be necessary to grow alongside, under precisely the same treatment, plants raised from seed of the same variety harvested with equal care in the five succeeding years. Had this been done, it would have been evident at once how far the good quality of the Cabbages in question was due to the age of the seed or to the excellence of the strain or stock. Perhaps Mr. Pope would like to send a few samples of Pope's Early Market Cabbage seed harvested in 1900, 1899, 1898, 1897, 1896, and 1895, to Chiswick for sowing in July or August next? From my own experience, I should be very much surprised if the seed harvested in 1900 did not give precisely the same results as those harvested in 1895, '96, '97, '98, '99. At any rate, the trial would be one of considerable interest to those who are troubled with Cabbages bolting in the spring. For my own part, I shall be most happy to send samples of seed of Cabbages I have myself selected, for comparison with Mr. Pope's, stating, of course, the year in which the seed was harvested. *Arthur W. Sutton, Reading.*

SPARROWS.—A great deal has been written upon the subject of these perky, impertinent, but withal interesting birds; but not one word has been said in their defence. Into the abstract question of whether they do more harm than good, I am not going to enter; but I have to record a remarkable event in their history, so far as this garden is concerned. I have some long borders of yellow Crocuses, and for many years my enjoyment of them was destroyed by these persistent marauders, who picked the bloom to pieces. But about five years ago, when I was looking out for the usual results, the destruction of the blooms, I was surprised to find that not one of them was touched; nor since then have I suffered in the least from their depredations. “I was informed upon authority,” as the halfpenny papers say, “which was quite reliable,” that a conference had been held, and that one aged member of the craft had made an eloquent speech, in which he stated that no shot was ever fired in the garden, that no traps were ever set, and therefore, as an expression of their gratitude, they had determined to leave the flowers alone for the future. Whether this was so it is not for me to say. I only mention the fact, adding that I never put any black thread to frighten the poor little innocents—in fact, made not the slightest alteration in their surroundings. If anyone can suggest a reason better than the foregoing as to why my borders are unmolested, I shall be very glad to hear it. I can only hope that the good conduct of the last five years will be continued. *Wild Rose.*

THE SPARROW CONTROVERSY.—Though I have no desire to join either side in the sparrow controversy, I am nevertheless inclined to the belief that the real life-history of the bird is not, to this day, thoroughly understood; else why does that eminent naturalist, Mr. Weir, take such a one-sided bearing on the subject? In some fifty years' varied experience, I have suffered much from these “homely” creatures, and in years long past wrought destruction amongst them by means of “crow-fig,” &c. Latterly, however, greater leisure has somewhat corrected past errors. True, I cannot now, in my present garden, get a *Polyanthus* to bloom, for these “gentry” take all flower-tubes out of the calyxes before they can unfold, so that I have fine, bold stems, bearing exceptionally fine cup calyx, green, and totally devoid of colour. Peas and Croci also suffer. Now let us “look on the other picture.” On my miniature front lawn, Rose-trees front the shrubbery near a window, and for the last two or three years a pair of old sparrows daily brought their brood of young thereto, to feed their fledglings on the green-fly they found upon the Rose-buds. The flutterings of the young first attracted attention, then through a glass it could be seen with what avidity they consumed the aphids. More recently, starlings came and wrought incessantly, breaking up worms, as I imagined, to carry to their young. The worms, however, seemed numerous, short and dark. I found ultimately, by the aid of the glasses, that many of them were grubs. Now to the point: two or three house-sparrows were constantly at war with the said starlings; and the outcome proved to be

that they ran forward and robbed them of a grub whenever one was exhumed, and they could do so. Amidst the foliage of large Ribston Pippin and Blenheim Orange Apple-trees existing within a few yards of my upstairs windows at the back of the house, sparrows seem also incessantly eyeing and pecking out provender; this also I am able to confirm by aid of the glass. We note the injury these birds may do, but do we watch their more beneficial antics sufficiently? *William Earley.*

GREENHOUSE HEATING.—Owing to the ruinous price charged for coal and coke during the last few years, the subject referred to by “Constant Reader” in last week's *Gardeners' Chronicle* (p. 358) has exercised the minds of both trade and private growers not a little. I have given a good deal of thought to the matter myself, as no doubt many other trade growers have done, and the result of my cogitations is to substitute petroleum for coal and coke as a means of heating all glasshouses, without interfering in any way with the existing heating apparatus further than the introduction into each furnace of an oil-stove of the desired size and shape. In the case of a horizontal tubular boiler, let the oil-stove correspond thereto in size and shape (minus the pipes), say, more in the shape of a plain saddle-boiler, made so as to leave a space of about 2 inches between the dome and sides of the oil-stove boiler and the tubular apparatus, and provided with a series of horizontal burners corresponding in number and position with the ends and top pipes constituting the horizontal tubular boiler, so that when the several wicks were lighted a continuous flare would play on each and all of the hot-water pipes referred to the full length of the oil-heating apparatus, which, I suppose, should consist of either cast-iron or copper, the “oil-way” being of sufficient space to store fuel-oil enough to last from twelve hours upwards; duplicates provided to enable the exhausted stove being withdrawn and replaced with a full one, with freshly-trimmed wicks, the change being effected within a few minutes. Once the water in boiler and pipes becomes heated it would necessarily be maintained at the required heat for any desired length of time, without incurring any expense, care, and anxiety in stoking. The sulphurous choking sensations experienced in clinkering becoming a thing of the past. O, what happy days are in store for horticulturists of the rising generation! Saddle-boilers could be heated by the same description of oil-heating apparatus with slight modifications in size and shape. Judging by the reports of the new-found inexhaustible oil springs in Texas, the expense of heating glasshouses in the manner indicated above would (taking cost of oil-burning apparatus and wicks into consideration) be light. I understand that the new-found oil springs consist not of luminous, but of fuel oil. This being so, all the more likelihood of a good and lasting supply of petroleum being obtainable for heating glasshouses at a nominal price when compared with cost of coal and coke. In the event of my ideas being put into practice, I reserve to myself all rights connected therewith! *H. W. Ward, Lime House, Rayleigh.*

THE FRUIT PROSPECTS IN WILTS.—At this place, Peaches, Nectarines, and Apricots promise to be a grand crop; the Plums will afford a moderate one; Gooseberries, Currants, and Raspberries are heavily loaded; and the Strawberry harvest will be most abundant, providing a bountiful rain falls in the course of next week. Pears will afford an average crop. Apples on bushes, espaliers, and pyramids have set very well, and in orchards the crop will be only partial. Nuts promise to be a capital crop. *W. A. Cook, Compton Bassett.*

PAEONIA OFFICINALIS.—Does anyone know of a pure white variety of this old and favourite *Paeony* in commerce. Everyone knows the fine old double crimson, one of the most brilliant of hardy border plants, and a universal favourite. From that presumably has sported the charming rose-coloured variety that is commonly known in commerce as *P. officinalis rosea*, and also the pretty pale pink form known as *P. carnescens*. So far, these are all familiar, but till a day or two since I had not seen a really white form. That, however, Mr. William Poupart has in his garden at Twickenham, and is represented by some eight or ten strong plants, showing in every respect the character and habit of the old crimson variety, but the flowers are really pure white, and densely double. It must not be assumed that it is a Chinese or other June-flowering variety. No one

can mistake the true old officinalis form who has become familiar with it. There is the habit, the stems, leaves, flowers, in all but colour, and the time of flowering. I do not know how long this comparative novelty has been in Mr. Poupart's hands, but certainly he has in the large plants in his garden enough to make a good stock. When I saw it many flowers had been cut, but there were still some dozens, large, massive, pure in colour, and presenting delightful companion features to the other varieties. In the somewhat stiff but well cultivated soil there, all *Peonies* do well. A Dutch florist who saw this white form recently in bloom, was most anxious to secure the stock. That would show that it is unknown in Holland. *A. D.*

DECIMAL COINS, WEIGHTS, AND MEASURES (p. 351).—Some years ago I had to inspect the accounts of a large estate in Florida, U.S.A., and can testify to the great advantage of the decimal system of coinage; calculations of all kinds referring to money, or weights and measures, can be done in less than half the time which our antiquated system requires, and are not so liable to errors. Ever since my visit I have marvelled at the slowness of our commercial men and legislators, because they take no steps to introduce such a good system into this country. Doubtless many persons suppose that it would upset all business arrangements, and be a hindrance to trade; but I am convinced it would soon work quite smoothly [as it does on the Continent, *Ep.*] The system is extremely easy to master, especially by those who have not forgotten their decimal arithmetic learnt at school. To those who have trade connections abroad, the change would be of great benefit, as nearly all countries now use a similar system, and Old England is in this matter left far behind in the march of progress. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

Obituary.

WILLIAM FANCOURT.—The name of Fancourt will be familiar to many of the older readers of the *Gardeners' Chronicle*, as that of a clever hardwood propagator, employed in some of the London nurseries thirty to forty years ago. We learn from an American journal that W. Fancourt the younger was born in London in 1830, and went to America in 1866, working first for Robert Buist, senior, and afterwards for John Dick, in Philadelphia. Ten years later saw him at Chicago serving John Goode of Hyde Park. He had a chequered existence, and died at the Cook County Hospital, Chicago, on May 20, and was buried by old florist acquaintances at Mount Greenwood Cemetery.

THOMAS SOFTLY WARE.—By the death of Mr. Thos. Softly Ware at Barnard Castle, Westmoreland, on May 30, a notable horticulturist has passed away, at the age of seventy-six years. The deceased, on retiring from business, went back to the place of his nativity to reside, and there he ended his days. The son of George Ware of that town, he commenced his career in his father's business, and in course of time migrated to Newcastle, and took a situation in a fancy ware-house, and after a stay there, he returned home and managed some pencil quarries at Widdy Bank. His next move was to a firm of wholesale drapers at Sunderland, and later to a wholesale house in London, and there he may be said to have completed his business training, varied as it was. By the kindness of a friend, who advanced him some capital, he started in business on his own account as a draper in London, and meeting with success, he was induced to take up his residence at Tottenham while yet it was little larger than a country village. At the back of his garden a Mr. Potts carried on a small business as a florist, and Mr. Ware became deeply interested in the plants grown and the methods of culture adopted there. A love for plants and their culture was developed in him in early life; it is said that he made the acquaintance of a Mr. Johnson at Barnard Castle, who encouraged him by giving him many of his spare plants; it is reported that Mr. Johnson usually put

his spare herbaceous subjects over the wall, and they were at once picked up and planted by Mr. Ware.

About the year 1857 Mr. Ware gave up his drapery business in London, and became the tenant of the Hale Farm, Tottenham. This he carried on for a few years, but soon came to see there was a growing taste for hardy plants, as there was then coming into force an unmistakable revolt against the garish bedding-out system, which had prevailed for some years; and he determined to undertake the collection and cultivation of such as a commercial speculation. He was far-seeing enough to note that good things would be certain to be in demand, and he set himself to work to acquire the very best collection he could. Meanwhile he had commenced the culture of *Pelargoniums*, the forcing of *H.P. Roses*, the production of Cucumbers, &c.; at the same time gradually relinquishing the farm work. By degrees he built up a very large hardy plant business; his great desire was to popularise them, and though the firm of Rollisson & Sons, and Robert Parker at Tooting, Backhouse & Son of York, and others, were noted for their collections of hardy plants, Mr. Ware went on collecting and cultivating, and soon had a very extensive connection. He availed himself of every opportunity to exhibit what he grew, and gradually came to employ some 100 persons in cultivating, packing, &c. Many were the medals awarded to him by the Royal Horticultural Society, and other societies. He had discovered the value of publicity, and he lost no opportunity of keeping himself before the public.

Mr. Ware was keen enough to see the future in store for the *Narcissus*, and while Mr. Peter Barr was acquiring them to supply retail customers, Mr. Ware was hunting for them in various directions to sell to the trade. He quickly saw that *N. bicolor Horsfieldi* would become very popular, and determined to acquire as much of it as possible; he on one occasion left London by the night mail train for Manchester, with all the cash he could scrape together, in order to purchase this particular variety, and returned with two hampers full of bulbs picked up mainly from small gardens. *N. poeticus ornatus*, and *Gladiolus Colvillei albus* became highly popular largely through his exertions; and by planting these and other subjects in the farm fields, there grew up a nursery of some 40 acres in extent; and bulbous plants became a leading feature of trade. Mr. Ware was ever enthusiastic and hardworking, the one set purpose of his life was to augment his collection of plants with anything of value, and then he exhibited it on all available occasions, and created a demand for it.

Failing memory induced him to retire from business, and he eventually took up his residence in his native town, which he had made a point of visiting when in business, and here he quietly passed away, but was buried at Chingford Cemetery, Essex. The late Mr. Fell became the proprietor of the Hale Farm Nurseries, while retaining the old title of T. S. Ware. On his decease the business passed into the hands of T. S. Ware, Limited, and was transferred from Tottenham to Feltham. Mr. Ware leaves a son, Mr. Walter T. Ware, the proprietor of the Inglecombe Nurseries at Bath. *R. D.*

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

JUNE 4.—*Present:* Dr. M. T. Masters, F.R.S. (in the Chair); and Messrs. Veitch, Bowles, Douglas, O'Brien, Chapman, Bateson, Worsdell, Bennett, Saunders, Hogg, Gordon, Worsley, Holmes, Drs. Rendle, Cooke, Müller, Rev. W. Wilks, and Rev. Prof. G. Henslow, Hon. Sec.; Visitor, Sir G. King, K.C.I.E., F.R.S., V.M.H.

Before commencing the usual business, the Chairman said he had a very pleasant duty to perform, which was, on behalf

of the Council, to present the visitor, Sir G. King, with the Victorian Medal of Honour. Sir George King expressed the great pleasure of receiving it, but considered himself as not worthy of that honour, a sentiment unanimously disavowed by all the members present.

Schinus Mollis with galls.—Mr. ROBERT NEWSTEAD reported as follows upon the specimens sent by Dr. Bonavia from San Remo:—"The insects upon the shoot are a species of adult ♀ *Ceroptastes*, and I think *C. rusci*, Linn., which is the only known Palearctic species of the genus. The insect is one of the most beautiful of the *Coccidae*."

Cherry Fruits and Caterpillars.—Specimens sent from the Chiswick Gardens showed some 50 per cent. of fruits attacked. The insect being within the calyx, this protects them from insecticides. Mr. SAUNDERS reported as follows upon them:—"The young Cherries from the Society's garden at Chiswick were attacked by the caterpillars of a small moth, *Argyresthia ephippella*, one of the *Tineina*. As to the destruction of this insect, where it is possible, cutting off and immediately burning the infested bunches of blossom is a very effective method. I cannot find any account of the life-history of this insect, and am therefore uncertain in what condition, or where it passes the winter. If it be either in the egg or chrysalis state attached to the bark of the stem or branches, a good remedy would be spraying with a caustic alkali wash some time after the leaves have fallen, and before the buds show any signs of opening in the spring. If the chrysalides be formed in the ground, a good dressing of lime applied to the surface early in the spring would probably prevent the moths from reaching the open air. Spraying the fruit would not be of any use, as the insecticide would not reach the caterpillar inside."

Raspberry Buds Attacked by Caterpillars.—Mr. A. GAUT, of the Yorkshire College, Leeds, sent the following communication:—"Enclosed you will find some Raspberry-buds containing caterpillars of the Raspberry stem bud caterpillar (*Lamprolomia rubiella*, Bjerk.), which you might think your Committee would like to see and notice. In and around Garforth, about 7 miles east of Leeds, upwards of 100 acres of Raspberries are grown for market purposes, and in some years this attack is a very serious one, as was the case last year, 1900. I visited the grounds then during the months of April, May, and June, and noticed the caterpillars, pupae, and little moths in immense quantities, and in some of the Raspberry-grounds the canes had the appearance as if they had been very much injured by frost. This entailed great loss to the growers. On April 20 I took a walk through several of the grounds, and noticed large quantities of the little scarlet caterpillars crawling up the stems, and very many within the buds, and I naturally expected a very serious attack again this year; but fortunately, owing to the warm weather we have experienced during the past week, the young buds and shoots have made such rapid progress that they have grown away from the attack; and although the caterpillars are still present in immense quantities, the crop will not be so much affected. I notice that it is in cold, late springs we get the worst attacks. Some of the more intelligent growers do not suffer so much, as they take the precaution to mulch the ground with soil containing some insecticide, or dress the ground about the stools with soot or lime during the winter months; and it is curious that those who follow the old practice of digging amongst the canes in winter also escape fairly well. I am doing all I can in the way of advice, but it is difficult to get many to follow it; and where there are so many growers, it is impossible to get them all to combat this attack at one and the same time, as should be the case."

Fungus on wood.—Mrs. FLOYER sent a specimen of an orange-coloured wool-like mycelium, observing that "it grows on the wooden posts put to protect visitors in the interior of Poole's Cavern, Buxton. It occurs many yards inside, where no light except that of an occasional gas-jet can reach it." Dr. M. C. COOKE reported upon it as follows:—"The substance you send has long been known and noted under the name of *Ozonium aureum*, and classed with fungi; but it is only an incomplete or imperfect stage, analogous to *Rhizomorpha*. It is supposed to represent the mycelium of some one or more of the woody *Polypori*, and possibly of *Fomes fomentarius*; this is, however, of small importance. It is an incomplete fungus, and will attack living trees, especially about the roots, and ultimately kill them."

Pelargonium, dissociation of colours in.—Mr. WILKS exhibited a truss from a plant which normally bears bright red-crimson flowers; but it had three blossoms of a pale pink-mauve tint, probably a reversion to an ancestral parent, such as *P. grandiflorum*, one of the original sources of the modern composite hybrid fancy *Pelargoniums*.

Podisoma on Juniper.—A branch bearing this fungus was received from Mr. W. H. DIVERS, Belvoir Castle Gardens. It is dimorphic, and produces the other form, known as *Roestelia lacerata*, on the Hawthorn.

Rose-leaf discoloured.—Mr. SAUNDERS showed leaves from a Marie Van Houtte Rose growing at Oxford. It was planted

in 1899, and did fairly well in 1900. This year all the leaves are variegated, much resembling those of the Japanese Honey-suckle. It was difficult to pronounce as to a cause, but something in the soil was suggested as likely to produce it. He also showed a stem of *Rosa rugosa* with a gall-like growth formed just above the level of the earth. The plant was one in a Rose-hedge composed of *R. rugosa* and *Aimée Vibert*. Several of the plants are affected in the same way. It appears to resemble a bacterial disease that attacks Raspberry-canies in the United States, known as "root or crown gall," and is by some attributed to frost. The Rose was grown at Micheldever, Hampshire. Mr. Worsdell undertook to examine it. He also exhibited a Tulip showing a bulbil in the axil of a leaf on the flower stem.

Cephalotaxus Fortunei malformed.—Mr. WORSDELL exhibited drawings of prolific conditions of the female flowers of this tree. These form really an inflorescence of bracts with two ovules, the latter being another shoot. Both the main axis and the floral axis were prolific. The question arose as to whether this was the result of an impediment to the circulation through strangulation, to which the tree was subjected, or to non-pollination.

Miltonia vexillaria.—Mr. CHAPMAN showed a fine flowering plant, remarkable for having the lateral petals marked like the labellum. It had exhibited this peculiarity for eight years, and plants raised by offsets from it bore the same abnormal flowers.

Tulip malformed.—Mr. O'BRIEN exhibited a Parrot Tulip in which the bracts and outer perianth leaves were partly green and partly yellow, exhibiting a not uncommon struggle between the "vegetative" and "reproductive" energies.

Aroid with flies.—Mr. BOWLES exhibited a large-spathed Aroid, the contracted part of the spathe being full of dead flies (*Lucilia*). These had previously laid eggs, the grubs of which had lived in the decayed mass. It was somewhat difficult to explain how cross-fertilisation could be secured, or how insects born within the spathe could escape.

Peach-leaves diseased.—Samples were received from Mr. GURNEY FOWLER, which Dr. Cooke undertook to examine. [See also under "Notices to Correspondents."]

Crinum hybrid.—Mr. WORSLEY showed a fine bloom with a rose-coloured perianth of *C. scabrum* × *C. Moorei*.

Tomato-leaves Proliferous.—Dr. BONAVIA sent some examples of this not uncommon peculiarity. It was the variety Orchard's No. 1. Dr. Bonavia regards the leaf as a modified branch, but the anatomical structure of the petiole is not that of a stem, but of the usual kind in petioles, having a horse-shoe like section of the fibro-vascular bundles, with two extra cords above on either side of the superior groove. The leaves had been shortened, and the abnormal buds grew out as a consequence from the axils of the leaflets. The inflorescence appears to terminate in a leaf with an axillary bud, but this latter is really the terminal bud being displaced by the vigour of the leaf. Mr. P. Duchartre was the first to describe proliferous Tomatoes. It occurred particularly in the true species, *Lycopersicon cerasiforme*, Dunal, less so in *L. pyriforme*, Dunal, and only in the hybrid *L. esculentum* when the leaves had been cut. Duchartre says the proliferous state was practically habitual in the yellow variety of the first-named species. The new bud arises from the axil of the leaflet, and a vascular connection is made with the upper end of the "horse-shoe"; the cords are very sinuous at first, but soon form a perfect cylinder, of an oval form in section, which then runs up the stem of the new bud.

CAMBRIDGESHIRE HORTICULTURAL.

JUNE 11.—This Society, one of the oldest in the Kingdom, has carried out a series of exhibitions annually since its establishment in March, 1824; and though during that long period of time the leading exhibitors and officials have been frequently changed, and the popular estimate of plants and flowers undergone various changes, the old spirit remains, and two exhibitions are held annually, one in June, generally in the delightful grounds of one of the colleges; and an autumn exhibition in the Corn Exchange. The Society is singularly fortunate in having as its Hon. Secretary Mr. Arthur Matthew, F.R.H.S., one of the leading tradesmen of the town; and an energetic Assistant-Secretary in Mr. F. E. Fordham. The exhibits, which filled two spacious tents, were admirably arranged by Mr. J. H. Ridgewell, a popular local horticulturist. The day was brilliantly fine, and the grounds of St. John's College, in which the show was held, were looking their best.

The leading features were in classes in which valuable special prizes were offered. There was a class for thirty-six distinct varieties of cut Roses, and four collections were staged, the Tea-scented varieties preponderating, and the blooms generally were very fine. Messrs. B. R. CANT & Co., Colchester, were placed 1st with excellent blooms of *Mon Desir*, *Crown Prince*, *Magna Charta*, *Helen Keller*, *Gen. Jacqueminot*, as brilliant in tint as ever; *Gustave Piganeau*, *Captain Hayward*, *Golden Gate*, *Souvenir de S. A. Prince*, *Robert Duncan*, *Madame G. Luizet*, *Maréchal Niel*, *Cleopatra*,

Catherine Mermet, *Innocente Pirola*, *Sylph*, *Lady Mary Fitzwilliam*, *The Bride*, &c. Messrs. D. PRIOR & SON, Colchester, were 2nd; they had good blooms of *Princess Beatrice*, *Caroline Kuster*, *Marchioness of Dufferin*, *Maman Cochet*, *Cleopatra*, *Maréchal Niel*, *Rubens*, *Mrs. W. J. Grant*, &c.; Messrs. GEO. PRINCE & SON, Oxford, were 3rd.

With twenty-four varieties, Messrs. B. R. CANT & Co. were again 1st with some brilliant blooms, especially fine being *Muriel Grahame*, *Cleopatra*, *Capt. Hayward*, *Golden Gate*, *Madame Cusin*, *Hon. E. Gifford*, *Maréchal Niel*, *Lady Mary Fitzwilliam*, and *Madame de Watteville*; 2nd, Messrs. D. PRIOR & SON, also in good form: chief among the blooms were *A. K. Williams*, *Kaiserin Augusta Victoria*, *Maréchal Niel*, *Lady Mary Fitzwilliam*, *Maman Cochet*, *Rubens*, *Caroline Kuster*, *Princess Beatrice*, and *The Bride*; 3rd, Messrs. F. CANT & Co., Colchester.

With twelve Teas, Messrs. F. CANT & Co. were 1st; here were fine examples of *Cleopatra*, *Souvenir d'Elise*, *S. d'un Ami*, *Medea*, *Anna Olivier*, *Souvenir de S. A. Prince*, *Maréchal Niel*, and *Catherine Mermet*; 2nd, Messrs. G. PRINCE & SON, Oxford.

PLANTS.

There was a time when stove and greenhouse plants were finely shown at Cambridge, but these are not now forthcoming, the liberal money prizes for twelve bringing no competition. The best group of flowering and foliaged plants to fill a space of 100 square feet came from Mr. J. Kirkpatrick, gr. to W. P. L. HUDSON, Esq., Pampisford; Mr. H. Edwards, gr. to Mr. Alderman W. BOND, Cambridge, was 2nd.

There was but one collection of ten Orchids, that from Mr. W. P. L. HUDSON. They consisted of Cattleyas, including *C. citrina*, together with *Dendrobis*, *Odontoglossums*, &c.

Begonias, both double and single, were in good character; but those in the competitive classes were overshadowed by a very fine collection from Mr. W. H. APTHORPE, Hills Road, Cambridge, not for competition, to which a special First-class Certificate of Merit was awarded. Fuchsias, *Gloxinias*, zonal *Pelargoniums*, in collections of twenty-four and twelve, formed fine patches of colour.



FIG 148.—*LAMPRONIA RUBIELLA*: RASPBERRY MOTH.
(See Report of the Royal Horticultural Society's Scientific Committee.)

CUT FLOWERS.

In the way of cut flowers, the best twelve bunches of hardy subjects came from Mr. A. MATTHEWS—a very good selection indeed; and Mr. J. CATLING was 2nd. There was also a class for six bunches. Zonal and Ivy-leaf *Pelargoniums* were shown in bright and attractive bunches; there were German and Spanish *Iris*, some excellent fancy *Pansies* for such a dry season, *Pyrethrus*, &c., and also the finer forms of *Ranunculus*—at one time a great feature at Cambridge, where they were grown by Richard Headly of Stapleford, and others.

The best twelve Roses came from the Rev. O. FISHER, of Hariton; the best six varieties came from Mr. W. DOWNS. The Rev. O. FISHER had the best six Tea-scented varieties.

MISCELLANEOUS EXHIBITS.

Fruit and some vegetables were also shown. Messrs. PAUL & SON, Old Nurseries, Cheshunt, had a charming collection of garden Roses, and received a First-class Certificate of Merit for their new Tea Rose *Lady Battersea*. Messrs. B. R. CANT & Co. also showed garden Roses, and both were awarded Certificates of Merit for their collections. The same award was made to Mr. W. H. APTHORPE for *Gloxinias* and Sweet Peas; to Mr. G. ROSCOE, Royston, for Sweet Peas; and also to Messrs. PRINCE & SON and Mr. WADE for the same; to Mr. BECH for *Begonia gloriosa*, a fine single-flowered pale orange-scarlet variety; and a special First-class Certificate of Merit to Mr. GILBERT for a very fine exhibit of Sweet Peas.

YORKSHIRE GALA.

JUNE 12, 13, 14.—For forty three years in succession the Yorkshire folk have held a horticultural exhibition in connection with a gala at York. An extract from the Society's rules states "that the object shall be to give encouragement to Floriculture, to increase the prosperity of the City of York, and to aid the funds of the York charities." That the Society is able to offer a sum of £750 for competition among horticulturists is doubtless to a large extent due to the fact that the combination of the Gala with the Show attracts a larger attendance of people than there would otherwise be. On the recent occasion, the exhibition was considerably better and fuller than was the case last year, and there were thirty more exhibitors than there was at that time, though the area covered by the tents was probably the same. The specimen plants, groups of plants, including the wonderful *Pelargoniums*, were as good as usual, or better, and Fruit seemed to be rather more in quantity. The cut Roses, however, caused the greatest surprise, for they were excellent. It was the first Rose exhibition we have seen, and if it is to be a sample of the exhibitions of the seasons, they will be of a very high quality indeed. This appeared the more surprising, because the drought that has so crippled out of doors crops in the South is just as evident in York-shire. But the Gala is seldom favoured with ideal weather, and on Tuesday, preceding the opening day, there came much cold, and the weather generally was rough and unsettled, so much so that the exhibitors, at one time, hesitated to stage their plants in the tents lest a disaster should occur similar to that experienced a few years since. The following day was by no means fine, and rain fell at intervals, and to some extent lessened the attendance. Mr. Simmons and his committee are to be congratulated upon the successful exhibition they have brought about, and the courtesy they extend to strangers whilst in their midst.

At the Judges' Luncheon the Lord Mayor of York and other notable citizens were present. It will be seen from our report that there were many exhibitors from London and the South. We have not been able to remark fully upon the florists' exhibits, but would state here that in addition to many 1st prizes Messrs. PERKINS & SONS, Coventry, were awarded a gold medal.

ORCHIDS.

There was a grand display of Orchids, but it was somewhat difficult to give a detailed report of these in the time available owing to the system of staging the plants of each exhibitor altogether, without reference to the class in which they may be entered.

The principal class was one for a "table of Orchids, 12 feet by 5 feet, arranged to produce the best effect," and both plants and cut blooms were available for this purpose. The best exhibit was one from Mr. J. CYPHER, who had a grand display of Cattleyas and Miltonias, also lesser quantities of *Odontoglossum crispum*, *Vanda teres*, *Cypripedium*, *Cecelogyne Dayana* and other species. Cut blossoms were tastefully displayed on two ornamental arches, and others were suspended from the tips of the branches of imitation of an old tree. The 1st prize of £12 was awarded to Mr. CYPHER. Next in merit was an exhibit from Mr. JOHN ROBSON, nurseryman, Altrincham, which showed a less studied arrangement, but which in itself was an excellent show of Cattleyas and *Odontoglossums*. Mr. W. VAUSE was awarded a 4th prize.

The 1st prize for ten Orchids was also won by Mr. JAMES CYPHER. He had fine specimens of *Laelia purpurata*, *L. grandis tenebrosa*, *L. purpurata alba*, *Cattleya Mossiae*, *C. Warneri*, *Odontoglossum crispum*, *Cypripedium Lawrenceanum*, *Miltonia vexillaria*, *Odontoglossum citrosum pendulum*, and *Dendrobium infundibulum*. The 2nd prize was awarded to Mr. JOHN ROBSON; he included five plants of *Laelia tenebrosa*, *Cattleya Mendeli*, *Laelia purpurata*, &c. 3rd, Mr. Barker, gr. to W. P. BURKINSHAW, Esq., West Hill, Hessele. The exhibitor last named won 1st prize for six Orchids in bloom; Mr. Cypher and Mr. Robson following.

The 1st prize for three Orchids was also won by W. P. BURKINSHAW, Esq., the varieties being *Cattleya Mendeli*, *Cypripedium Rothschildianum*, and *Epidendrum vitellinum majus*. Mr. CYPHER was 2nd.

The best collection of six new or rare Orchids contained *Cypripedium callosum Sandersi*, *Cattleya intermedia alba*, *C. Mossiae* var. *Barkeri*, *L. C.* var. *Daphne*, and *L. tenebrosa* *L. O. Canhamiana*, and were shown by W. P. BURKINSHAW, Esq.

For a collection of three Orchids, new or rare specimens (no making-up allowed in this or previous class), the best exhibit was one from W. P. BURKINSHAW, Esq., and he showed *Cypripedium Lawrenceanum*, *Hyanium*, a variety of *Cattleya Mossiae*, and *Laelia tenebrosa Charlesworthi*.

For four Orchids in bloom the best collection contained *Laelia tenebrosa flavescens*, *Cattleya Mendeli*, *Robsoni*, *C. Mossiae* var. *Reineckiana*, and *Epidendrum vitellinum majus*. (This also was from Mr. BURKINSHAW.) 2nd, Mr. J. McLeod, gr. to Sir J. W. FRASE, Bart., Hutton Hall, Guisborough, Yorks. The best specimen Orchid was Mr. BURKINSHAW's *Phaius* (*Thunia* *Vietchi*), with a number of fine flowers.

SPECIMEN PLANTS.

Twelve Stove and Greenhouse Plants in bloom.—The plants exhibited in this class were arranged on huge shelves erected in an octagonal area under a bell-shaped tent. The 1st prize collection was shown by Mr. J. CYPRER, Cheltenham, and included magnificent specimens of such species as *Aphelaxis macranta rosea*, *Bougainvillea Sandemana*, *Livistona chinensis*, *Erica Cavendishii*, *Anthurum Scherzerianum*, *Dracophyllum gracile*, *Codiaeum Mortefontaine*, *Erica ventricosa magnifica*, *Kentia Belmoreana*, &c. Mr. W. VAUSE, Leamington, won the 2nd prize with rather smaller specimens, which included *Stephanotis floribunda* and *Vinca rosea*; 3rd, Mr. C. Lawton, gr. to Col. HARRISON BROADLEY.

The class for six stove and greenhouse plants was also won by Mr. CYPRER, whose collection included a fine plant of *Franciscus exoni* and others. Mr. VAUSE was again 2nd in this class.

Mr. CYPRER, who won another 1st prize in a class for three stove or greenhouse plants in bloom, was followed by Messrs. SIMPSON & SON.

The best specimen of an *Erica* was one of *E. depressa* (yellow) shown by Mr. CYPRER, and the same exhibitor had the best plant of *Rhododendron* (*Azalea*) *laetum*, the variety being *Holfordiana*.

A very remarkable exhibit was made by Colonel HARRISON BROADLEY in the class for three ornamental foliage plants. His trio were quite exceptional specimens. The species were *Dasylyrium acrotrichum*, *Kentia Belmoreana*, and *Codiaeum Cheloni*, each of them being large in size and perfect in development. Mr. W. VAUSE was 2nd in this class, and Messrs. R. SIMPSON & SON, Selby, 3rd.

The larger class for six such specimens was won by Mr. CYPRER, and Mr. VAUSE was 2nd.

Mr. W. VAUSE won 1st prize for a single specimen stove plant with a large *Anthurum Scherzerianum*, and for a single specimen greenhouse plant with *Erica ventricosa*.

The best *Codiaeums* shown in a class for three specimens were from Messrs. R. SIMPSON & SON, and were large in size as well as good in colour.

Pelargoniums.—The tent that was almost devoted to the exhibition of these showy plants was indeed a glowing sight. Many of the specimens were 4 or 5 feet across, trained to a flat circular frame. When some scores of such plants are tilted just a little to form banks of bloom we know of no more striking spectacle. They are now, in the twentieth century, almost peculiar to York, for where else is such a show to be seen? Even in Yorkshire the cultivators, or at least the exhibitors of such plants, appear to have become few. Scarcely more than three establishments were responsible for the display—that is certainly one of the features that makes the York show distinct from others. These were Mrs. TETLEY, Fox Hill, Westwood, Leeds (gr. Mr. Isaac Eastwood); J. BETTERBY, Esq., Burton Lane, York (gr. Mr. W. Spavin); J. B. OLDFHAM, Esq., Tollerton, Easingwold (gr. Mr. W. Pank); Mr. H. PYBUS, Leeds; Messrs. R. SIMPSON & SON, and Mr. J. W. CLARK. There were classes for twelve, six, and three show varieties; also for a group of fancy varieties for twelve, six, and three Zonal or Nosegay varieties, for nine and three double-flowered varieties, and for six and three double-flowered triple-flowered varieties. We will not trouble the reader with a list of the varieties shown, for we did not notice any new ones. Mrs. TETLEY won by far the most prizes, and appears to be the champion exhibitor of these showy flowering plants.

ROSES.

The exhaustive class for seventy-two blooms, in not fewer than thirty-five varieties, was won by Messrs. B. R. CANT & SONS, Colchester, with a collection of wonderful blooms. The very best included Catherine Mermet, White Maman Cochet, Medea, Cleopatra, Marechal Niel, Golden Gate (very fine), Marie Van Houtte (delightfully tinted), Bridesmaid, Abel Carriere, K. A. Victoria, and Madame Gabrielle Luizet. The whole collection was exceedingly good. The 2nd prize was won by Messrs. HARKNESS & SONS, Bedale; and the 3rd by Mr. Geo. MOUNT, Canterbury; and 4th, Messrs. W. & J. TOWNSEND, Worcester. There were five competitors.

The best class for forty-eight distinct varieties was also from Messrs. B. R. CANT & SONS, who had a collection of blooms of remarkable quality. Specially good were Ulrich Brunner, Madame Cusin (of unusually good colour), Cleopatra, Mrs. A. J. Grant, Madame Lambard, Marechal Niel, Souvenir de S. A. Prince, Crown Prince, Marie Van Houtte, Devoniensis, Bridesmaid, Kaiserin Augusta Victoria, Comtesse de Nadaillac, Ethel Brownlow, &c. Messrs. HARKNESS & SONS, Bedale, Yorkshire, had a collection of very distinct colours, the flowers being a little less in size than Messrs. Cant's. Messrs. J. TOWNSEND & SONS, Worcester, were 3rd; and Mr. MOUNT, Canterbury, 4th. There were five exhibitors.

For thirty-six distinct Roses Mr. GEORGE PRINCE, Oxford, won 1st prize for an exhibit which, as usual in the case of this doughty exhibitor, consisted for the greater part of Tea-scented varieties, but the flowers were splashed a little by rain. Princess of Wales was very large, and indeed most of the flowers were good in point of size. Messrs. B. R. CANT & SONS were 2nd, Messrs. TOWNSEND & SONS 3rd, and Messrs. COOLING & SONS 4th.

The class for eighteen distinct varieties was also won by Mr. GEORGE PRINCE, Oxford, who had only one bloom other than a Tea or H. Tea. Some of the best varieties were Souvenir de S. A. Prince, Cleopatra, Marie Van Houtte, Luciole, Innocente Pirola, Medea, &c. Messrs. B. R. CANT & SONS were 2nd, and Messrs. GEORGE COOLING & SONS, Bath, 3rd. There were five competitors.

Twenty-four varieties distinct.—Mr. GEORGE PRINCE was adjudged 1st in this class, and Messrs. B. R. CANT & SONS

2nd. Both collections included some large well-developed blooms. Messrs. TOWNSEND & SONS were 3rd, and there were four other exhibitors.

Twelve white and yellow varieties in not fewer than six varieties.—Mr. Geo. PRINCE won 1st prize, showing the varieties Marechal Niel, Souvenir de S. A. Prince, Comtesse de Nadaillac, Medina, The Bride, and Niphetos. These were very good. 2nd, Messrs. B. R. CANT & SONS; and 3rd, Messrs. HARKNESS & SONS. There were five competitors.

There were several classes for cut Roses, restricted to Amateurs and Gentlemen's Gardeners.

The best exhibit of six distinct varieties of Roses in pots was shown by Mr. H. PYBUS, Monkton Moor, Leeds; and Messrs. W. JACKSON & CO., Bedale, were 2nd.

For a group of Plants blooming in pots, the best competitor was Mr. J. D. HUTCHINSON, Kirby Moorside, whose plants bore many a pretty flower. Mr. H. PYBUS was 2nd, and Messrs. W. JACKSON & CO., Bedale, 3rd.

GROUPS OF SPECIES OF PLANTS.

CARNATIONS.—The best group of Carnations in Pots was one from A. WILSON, Esq., Tranby Croft (gr. Mr. J. P. Leadbetter). The group was composed chiefly of Souvenir de la Malmaison varieties, with Cecilia, and a crimson-flowered tree also. The plants were good, and the quality of the flowers first-rate. 2nd, Mr. W. MURCHISON, gr. to H. B. GROTRIAN, Esq., Inghamthorpe Hall, Wetherby. This was a very tastefully arranged group, and had the best effect of any in the class. The old blush variety of the Souvenir de la Malmaison type was well shown, and there was plenty of relief provided in the way of foliage plants.

HERBACEOUS CALCIFOLIARIES were well shown by W. T. OWBRIDGE, Esq., Cherry Garth, Cottingham, Hull, who had a group of them on a space not exceeding 12 feet by 5 feet. The self-coloured and spotted varieties were equally well shown. The 2nd prize in the same class was awarded to T. M. LAMBERT, Esq., Bechlands, The Mount, York, whilst Mrs. LLOYD, Lingcroft, York, was 3rd. There were two other competitors.

Liliums.—The 1st prize for six Liliums in pots was won by Messrs. R. WALLACE & CO., Kilmfield Gardens, Colchester, and they had five plants of *L. umbellatum erectum*, *L. longiflorum*, *L. Henryii*, *L. excelsum*, and *L. odorum*. The 2nd prize was won by Mr. LEADBETTER, who showed *L. longiflorum*.

Ferns.—There were several classes for exotic and hardy Ferns, and they made a considerable group together; but it was very difficult to obtain exact notes of them, owing to the promiscuous arrangement. The Rev. G. YEATS, Heworth Vicarage, York, won 1st prize for six exotic species, and Messrs. R. SIMPSON & SON were 2nd. In this and other exhibits we remarked good specimens of *Microlepia hirta cristata*, *Davallia*, *Adiantum concinnum*, *Asplenium autralasicum*, *Dicksonia antarctica*, *Adiantum Williamsii*, *A. tenerum* Farleyense. The best collection of ten hardy Ferns was shown by Mr. THOS. NICHOLSON, Croft's Terrace, York, who included a cristate variety of *Scolopendrium vulgare*, *Osmunda intermedia*, *Polystichum proliferum*, *Adiantum pedatum*, &c. 2nd, Messrs. R. SIMPSON & SON.

Alpine and Herbaceous Plants.—For a collection of twenty plants in pots or pans, Mr. S. HARGREAVE, Bishop Wilton, was awarded a 1st prize. He had excellent pans of *Semprevivum Hookeri*, *S. arachnoidum*, *S. macranthum*, *S. montanum*, *S. globiferum*, *S. filiferum*, *Saxifraga pyramidalis*; also good plants of *Pyrethrum roseum*, *Thalictrum adiantifolium*, &c.

Gloxinias.—The best group of Gloxinias was shown by Messrs. R. SIMPSON & SON, and the Rev. G. YEATS was 2nd, but the best collection of eight plants was shown by T. M. LAMBERT, Esq., Bechlands, York (gr. Mr. J. Veary).

Begonias and Fuchsias.—There were several classes for tuberous-rooted Begonias and for Fuchsias. The Begonias were less remarkable than some of the pyramidal Fuchsias shown by Miss WHARTON.

GROUPS OF MISCELLANEOUS PLANTS.

The leading class at York for a group of miscellaneous plants, staged in such a manner as to produce the best possible effect as a picture, is always a popular one, and is generally well contested. On this occasion there were five competitors. The groups faced only one way, and were each arranged on a space of 300 square feet; they were backed to the centre of the largest tent, and ran along about three-pieces its length. The winner of the 1st prize of £20 proved to be E. B. FABER, Esq., Belvedere, Harrogate (gr. Mr. W. Townsend). The chief ornament of the group was a rustic stand upon four legs, covered with cork, and from which was suspended a large number of plants of *Odontoglossum crispum* in variety, surmounted by a pretty specimen of *Cocos Weddelliana*. There were many well-grown, brightly coloured *Codiaeums* (*Crotons*), *Acalyphas*, *Cordylines*, &c., in the group, and all of the Orchids it contained were of very fine quality. 2nd, Mr. J. S. SHARP, Valley Nurseries, Almondsbury, Huddersfield, whose exhibit was arranged upon the "dot" system, but was scarcely so light in appearance as the one described above. This group contained some excellent specimens of choice foliage plants, including *Abutilon Savitzi*, *Cocos Weddelliana*, varieties of *Codiaeum*, *Pandanus Veitchii*, &c. 3rd, Mr. W. VAUSE, Leamington, whose exhibit was very good in design, but weak in execution. From the front corners of the group ran rustic arches towards the centre, where a minor pyramidal group was arranged. The groundwork of the exhibit was insufficient, and conveyed the impression of poverty of material, or it would have deserved a better award. There were some fine *Cattleyas* in the

arrangement. 4th, J. BLACKER, Esq., Thorpe Villas, Selby (gr. Mr. W. Curtis), who had some first-class *Codiaeums*, *Odontoglossums*, and other plants. Messrs. R. SIMPSON & SONS, Selby, won the 5th prize.

CUT FLOWERS OTHER THAN ROSES.

There were very many collections of cut flowers representative of different species of plants.

For a collection of eighteen bunches of hardy flowers, in not fewer than nine varieties, the 1st prize was won by Messrs. HARKNESS & SON, who was followed by Messrs. G. GIBSON & CO., and Mr. MCINDOE.

Messrs. HARKNESS also won premier place for twelve bunches, distinct, having splendid bunches of double *Pyrethrum Godiva*, *Campanula glomerata Dahurica*, *Iaula glandulosa* and *I. g. grandiflora*, *Pyrethrum roseum* *Elsie Gertrude*, *Peony Madame Chaumy*, *Hesperis matronalis purpurea plena*, *Gladiolus Blushing Bride*; Mr. MCINDOE was 2nd; Messrs. GIBSON & CO., 3rd; and Messrs. WALLACE, Colchester, 4th.

For a collection of cut hardy flowers, on a space not exceeding 8 feet by 5 feet, Messrs. HARKNESS were again champions, and showed excellent bunches of varieties of *Pyrethrum roseum*, *Papaver orientale semi-plenum*, and *Prince of Orange*, *Iris germanica Gracchus*, and many other species.

The best collection of twelve bunches of stove and greenhouse cut flowers was shown by Mr. J. MCINDOE. *Clerodendron fallax* was very fine, and there were several bunches of Orchids. The 2nd prize was won by W. H. BATTIE WRIGHTSON, Esq.

A similar class from which Orchids were excluded was also won by Mr. J. MCINDOE; and W. H. BATTIE WRIGHTSON was 2nd.

A number of classes were devoted to floral designs, ornamental stands of flowers, hand-baskets of flowers, and bouquets, &c., in which there was good competition, and a fine display.

NON-COMPETITIVE EXHIBITS.

Messrs. R. WALLACE & CO., Kilmfield Gardens, Colchester, whom we have not noticed at York until this year, made an excellent display with cut Lilies, Irises, Peonies, *Ornithogalum arabicum*, *Brodias*, *Ixias*, *Calceolus*, &c. The showy *Brodiaea coccinea* was well shown, its crimson flowers with green-tipped segments being most striking; *B. capitata* x *B. c. alba*, *B. laxa*, *B. ixioides splendens* (yellow), &c., were with it. Of Lilies, the very pretty little *L. tenuifolium*, with its coral scarlet flowers, *L. rubellum*, *L. bulbiferum*, *L. Szovitzianum* (yellow), *L. Hansonii*, many varieties of *L. Thunbergianum*, *L. excelsum*, *L. longiflorum giganteum*, &c. In this group were *Incarvillea Delavayi*, *Hemerocallis flava*, *Hieracium villosum* (Silver-gilt Medal).

Messrs. WEBB & SON, Wordsley, Stourbridge, had a pretty group of Gloxinias, relieved with a few *Adiantums*, *Cocos Weddelliana*, &c. The Gloxinias included varieties with very bright and varied colours, the self-coloured ones being most noteworthy.

Messrs. F. F. RIVERS & SON, Sawbridgeworth Nurseries, Herts, made almost as good an exhibit of choice fruit-trees in pots as the firm is in the habit of doing at the "Temple" Show. Of *Paehes*, only the variety *Magdala* was shown, but there were many sorts of Nectarines, including *Bumboldt*, *Dryden*, *Stanwick Elruge*, *Lord Napier*, *Cardinal*, *Milton*, and others. Early Rivers' *Belle d'Orleans* and other varieties of Cherries, also *Czar Plums*, *Early Prolific Plum*, and others, were represented by freely cropped trees, such as the Sawbridgeworth firm have long since acquired an unique reputation for (Gold Medal).

Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea, made a most charming floral picture, with groups of Gloxinias, *Streptocarpus*, and of the valuable new greenhouse flowering plant, *Kalanchoe flammea*, which was new in Yorkshire. The Gloxinias were superb, fine arge plants, some of which bore upwards of two dozen fully-expanded flowers of large size, and much substance, whilst the colours, whether self or bi-coloured varieties, were equally fine. The *Streptocarpaceae* exhibited many distinct, uncommon colours, and showed that the strain is rapidly becoming improved, and the plants are still more valuable as decorative specimens for vases, as well as for forming into a group. The *Kalanchoes* were similar to those shown at the Drill Hall on Tuesday week last (Gold Medal).

Messrs. W. CUTBUSH & SON, Highgate, London, N., brought a great quantity of Carnations in pots, which were arranged in a manner similar to that which the firm adopts at the Temple Show. The different little groups or pyramids represented a type or variety. One of them was composed of Souvenir de la Malmaison varieties, in which *Florizel*, *Princess May*, *Monica Measures*, *Chas. Freemantle*, and others more or less new were conspicuous. The variety *Baldwin*, of the same type, made a group of itself; it is a very rich rosy-pink colour. The well-known but comparatively new *Cecilia*, a border variety, with large yellow flowers, having many characteristics peculiar to the Malmaison type, was well shown. *Fanny Wilcox* is a new border variety, with delicate pink blossoms, and slightly-fringed petals; *W. Robinson* (crimson), and many other varieties were included. Two groups of flowers of *Eremurus himalaicus* at the front corners were imposing, and a good background to the group was furnished by plants of *Rose Crimson Rambler* and hardy and tender *Rhododendrons* (*Azaleas*), &c. (Gold Medal).

ORCHIDS.—Messrs. HUGH LOW & CO., Bush Hill Park Nurseries, Middlesex, in a small group of Orchids, included *Cattleya Mossiae Reineckiana*, *King Edward VII.*, pure white, with purple and gold lip; *C. M. alba* var. "The Queen," a very pretty spotted variety of *Odontoglossum crispum*, and a

capital variety of *O. Loochristiensis*. *Cattleya Mossie* excel-a, which we described of this show last year; *Lælio-Cattleya* × *Phoebe* (L. flava × C. Mossie), colour apricot-yellow, except for crimson markings; *Cattleya intermedia* alba, a most elegant, pure white variety, &c., were included.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea, had a small group of Orchids, in which *Lælio-Cattleya Canhamiana* (C. Mossie × L. purpurata ?), was prominent. There were four distinct varieties of this valuable hybrid, one of which was white, except for a richly-coloured labellum. L.-C. *eximia* was very fine, and there were L.-C. G. S. Ball (L. cinabarinata × C. Schroderae ?), L.-C. *Ascania*, L.-C. *Hippolyta*, and others were shown well.

Messrs. CHARLESWORTH & CO., Heaton, Bradford, exhibited a group of Orchids, in which *Cattleyas* were largely represented. There were several very good varieties of C. Mendeli. Of C. Mossie, there were varieties of very striking colour; Wagneri, white, with yellow sides to the labellum; aurea, with a labellum richly marked with golden-yellow, flamea, &c. *Lælio-Cattleyas* included L.-C. Lady Wigan, a most attractive flower with tinted sepals and petals, and richly-coloured labellum; also the paler form of this hybrid, known as the Cambridge Lodge variety; L.-C. *Canhamiana*, and L.-C. *Canhamiana* "ignescens," with a labellum of wholly rich purple; L.-C. *Phoebe*, &c.; *Mitonia vexillaria*, *Odontoglossum crispum*, *Cypripedium Gowerianum*, &c.

Messrs. GEO. BOYES & CO., Aylestone Nurseries, Leicester exhibited a group of plants of *Carnation* Earl Roberts, a tree variety, with large, primrose-yellow coloured flowers; also cut flowers of *Carnations* in great variety.

A fine lot of flower-trusses of *Schubertia grandiflora* was shown by Mr. Bailey Wadds, gr. to Lord Middleton, Bird-sall, York. These flowers were described as "a rival to *Stephanotis floribunda*." Usually this climbing plant is less free in flowering than the *Stephanotis*, but where it succeeds, the flowers are invariably appreciated, as they are wholly white, and very agreeably scented. The plants are very liable to attack from mealy-bug, and the leaves and stems being very hirsute, the pest is not easily removed. Dipping in an insecticide is the best method to be adopted.

A very pretty exhibit of seedling Irises and *Hemerocallis* was made by Mr. GEO. YELD, Clifton Cottage, York. Mr. YELD has obtained hybrids from a cross between *Hemerocallis flava* × H. Sieboldi. A variety known as Apricot is a very nice one that was so raised, but there are several other varieties that vary considerably in degree of colour. A very lovely seedling was Iris (I. Sarpodon), raised from a cross in which Iris *Cypriana* was the seed parent.

From Mr. LEOPOLD DE ROTHSCHILD'S garden at Gunnersbury House, Acton, Middlesex (gr. Mr. J. Hudson), was an exhibit of cut flowers of fifteen varieties of *Nymphaea* grown in the open air. Foliage and flowers of one variety were shown in separate large dishes, which displayed them perfectly. Several of the best of Marliac's hybrids were shown. Also N. Robinsonians, N. Ellisiana, N. ignea, N. lucida, N. flamea, N. Seignouretii, N. Froebelii, N. William Falconer, N. Andreana, N. albo-candidissima, and N. William Doogue (Silver-gilt Medal).

Messrs. JOHN PEED & SONS, Roupell Park Nurseries, Norwood Road, London, exhibited a large group of *Gloxinias*, interspersed with *Adiantums* and other bright ornamental foliage plants. The plants were large specimens, some of them in 7 and 8 inch pots, and these were very attractive varieties. Mrs. McKinley was one of these, white, with pink margin; Earl Roberts, white, with rich purple margin, distinct; Queen Alexandra, a very pretty pink and white variety, minutely spotted; Roupell Beauty, crimson; Countess of Warwick, also pink and white; Sir Thomas Lipton, rosy scarlet; Shamrock I, something of the same colour, but without a trace of white in the throat; Fairy Queen, good spotted variety, and many others (Silver Medal).

Messrs. GEO. COOLING & SONS, Bath, made a good exhibit of *Roses*, mostly garden varieties, put up in large bunches. Some of the more noticeable of these were the varieties Harrisoni, yellow; Ma Capucine, orange and red; Corallina, Janet's Pride, pink and white, single, very fine; L'ideal, yellow; Austrian Briar, and W. A. Richardson (Silver Medal).

Mr. J. WOOD, Hardy Plant Specialist, Woodville, Kirkstall, Leeds, exhibited a few hardy plants in flower.

Messrs. W. CLIBRAN & SONS, Altrincham, exhibited a group of *Codibeums*, including such pretty varieties as Mrs. Clibran, Pride of Oldfield, Archibald, Oldfield Gem; also *Richardia* Elliotiana, R. Pentlandi, and R. Taylori. A new purple *Lobelia* with white eye, named Mrs. Clibran, was exhibited, and given an Award of Merit; it is very dwarf, and in colour a distinct shade of purple. There were also cut flowers of Irises, Lupins, and miscellaneous herbaceous species (Silver Medal).

Messrs. R. SMITH & CO., Worcester, showed a very miscellaneous group of plants, including stove, greenhouse, and hardy species, all of the plants being good specimens, but they were so numerous we must refrain from alluding to particular ones (Gold Medal).

Messrs. DICKSONS, Ltd., Chester, exhibited a grand lot of named varieties of *Pæonies*, and also of *Spanish Irises*. A bloom also of the hardy *Arum crinitum* was shown (Silver Medal).

FRUIT.

There was quite as good a display of fruit as is generally shown at York, and as can be expected at such an early date of the season.

The principal class on the occasion under notice was arranged for a decorated table of ripe fruit, upon a space of 10 feet by 4 feet 6 inches. There were not to be more than fourteen, nor fewer than ten dishes in each exhibit. A number of other conditions were stated in the schedule, and instruc-

tions given upon the plan in which the exhibits would be judged, and the maximum number of points that would be awarded in the case of each dish of fruits, and for decorations.

There were four exhibitors, the 1st prize being gained by Sir J. W. PEASE, Bart., Hutton Hall, Guisborough, Yorks (gr. Mr. J. McIntosh). The varieties shown were as follows, we append the number of points gained by each:—Cherries Early Rivers and Bigarreau de Schrecken (9½ points); Figs Brown Turkey (5½ points); Grapes Black Hamburg and Muscat of Alexandria (11½ points); Melons Best of All and Hutton Hall Green Flesh (10 points); Nectarines Earl Rivers (5 points); Peaches Early Alfred and Grosse Mignonne (10 points); Plums Early Transparent Gage and Count Althann's Gage (10½ points); Strawberry Royal Sovereign (5 points); Pear Clapp's Favourite (5 points); for beauty of flower and foliage, 6 points were awarded; for harmonious blending of colour, 6 points; and for general arrangement for effect, 6 points; making a total number of 90 points. The floral decoration consisted of Orchids, *Heuchera sanguinea*, *Francia ramosa*, &c., with suitable foliage arranged in trumpet-shaped and other glasses. Mr. C. E. SIMPSON, Huttons Row, Scarborough, was 2nd, and scored 67½ points, losing the 1st prize in respect of quality of fruits shown. The 3rd prize was won by Mr. J. SINCLAIR, Blake Street York, who was awarded a total of 66 points. This exhibit used a yellow Spanish Iris rather abundantly, and the effect was not so good for this reason.

There was only one competitor in a class for a collection of fruits (eight kinds), and this was Mr. MCINDOE. He had Black Hamburg and Foster's Seedling Grapes, Grosse Mignonne Peaches, Brown Turkey Figs, Murray Nectarines, Purple Imperial Plums, Black Tartarian Cherries, and York-shire Beauty Melon.

Collection of Fruits (four kinds).—There were eight competitors in this class, and the 1st prize was won by Mr. JAS. TULLETT, gr. to Lord BARNARD, Baby Castle, Darlington. He had a grand collection, including Black Hamburg Grapes, a Melon called Best of All, and very large Peaches and Nectarines. The 2nd prize was awarded to Mr. R. DOE, gr. to the Earl of DERBY, Knowsley Hall, near Liverpool, who had good Royal Sovereign Strawberries, Dymond Peach, Rivers' Early Nectarine, and Black Hamburg Grapes. 3rd, Mr. J. MCINDOE; and 4th, Mr. J. C. McPherson, gr. to the Earl of LONDSEBOROUGH, Londesborough Park, York.

The best Pineapple was one shown by Mr. F. JORDAN, gr. to the Executors of J. CORBETT, Esq., Impney Hall, Droitwich. Mr. JOHN TULLETT, gr. to Lord BARNARD, taking 2nd prize.

GRAPES.

Three bunches of Black Hamburg.—Marvellously well coloured bunches from Mr. J. P. Leadbetter, gr. to A. WILSON, Esq., Tranby Croft, Hull, were awarded 1st prize. Good bunches were also shown by Mr. J. C. McPherson, gr. to the Earl of LONDSEBOROUGH, and these were awarded 2nd, place; 3rd, Mr. JAS. TULLETT. There were nine exhibitors.

Three bunches of White Grapes.—The variety Buckland Sweetwater won 1st prize, and it was shown by Mr. W. NICHOLS, gr. to the Hon. Lady BEAUMONT, Carlton Towers; Mr. JAS. TULLETT with Foster's Seedling was 2nd; Mr. JAS. MCINDOE 3rd with Foster's Seedling; and Mr. W. CHUCK, gr. to H. THELLUSON, Esq., Brodsworth Hall, Doncaster, 4th, showing the same variety. There were seven exhibitors.

PEACHES.

The best dish of six Peaches came from Mr. D. WILLIAMS, gr. to the Earl of FEVERSHAM, Duncombe Hall, Helmsley; and Mr. A. Alderman, gr. to J. D. ELLIS, Esq., Sparken House, Worksop, was 2nd, showing the variety Stirling Castle; 3rd, Mr. J. A. Large, gr. to W. SHEEPHANKS, Esq. There were twelve exhibits in this class.

NECTARINES.

Only four dishes of six fruits each were staged. The 1st prize was gained by Mr. R. DOE, who had grand, heavily coloured fruits of Rivers' Early; Mr. JAS. SUMMERS, Sunderland, was 2nd; and Mr. W. Pilgrim, gr. to Sir GEO. MEYRICK, Bodorgan, Isle of Anglesey, 3rd, the variety being Lord Napier.

MELONS.

There were twenty-six Melons exhibited. The 1st prize for a scarlet-fleshed variety was won by Mr. J. McPHERSON, who showed Gunton Scarlet; and the 1st prize for a green-fleshed variety by the same exhibitor, with the variety Royal Jubilee. The best white-fleshed variety was shown by Mr. JAS. SUMMERS, Sunderland.

FIGS.

Of five dishes of Figs, the best was from Mr. J. P. LEADBETTER, who had Brown Turkey. Mr. G. E. THOMAS, gr. to the Marquis of Anglesey, was 2nd with the same variety; and Mr. D. WILLIAMS 3rd.

STRAWBERRIES.

Four dishes of Strawberries were exhibited, and Mr. R. DOE won 1st prize with the variety Royal Sovereign; Mr. W. CHUCK was 2nd. A dish of fruits of the old President was shown by Mr. E. EVERARD, gr. to Mrs. Gutch, Holgate Lodge, York, but this was not placed.

TOMATOES.

There were twelve fine dishes of Tomatoes, and the best fruits were of the variety Polegate, and shown by W. H. BATTIE WRIGHTSON, Esq., Cusworth Park, Doncaster; Mr.

J. C. McPHERSON was 2nd with the variety Frogmore Selected. There were four other competitors.

VEGETABLES.

For Messrs. WEBB & SONS' prizes, offered for a collection of vegetables, including six distinct kinds, there were five competitors. The 1st prize was won by Mr. E. BECKETT, gr. to Lord ALDENHAM, Aldenham House, Elstree, Herts; he had excellent Tomatoes of the variety Viceroy, and fine pods of a new Pea raised by Mr. Beckett, and named Edwin Beckett; Potato Sharpe's Victor, Carrot Prizewinner, Bean Canadian Wonder, and Cauliflower Peerless were the best of the exhibits. Mr. J. MCINDOE was 2nd, and Mr. B. ASHTON, gr. to the Earl of LATHOM, Ormskirk 3rd.

The 1st prize in Messrs. SUTTON'S class for a collection of six dishes was also won by Mr. BECKETT, and the 2nd prize also went to the same exhibitor as in Messrs. Webb's class.

The Society offered no additional prizes for vegetables.

BRISTOL AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.

THE summer session was opened at St. John's Parish Rooms on Thursday June 6, Mr. A. J. HANCOCK presiding. The Chairman introduced Mr. H. R. RICHARDS, of Horfield, who gave a lecture on "Indoor Fruit Culture." He claimed that the culture of indoor fruits was one of the most important duties a gardener had to undertake, inasmuch as a full crop was expected every year. A discussion followed the delivery of the lecture, and a hearty vote of thanks was accorded the lecturer.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

THE monthly committee meeting of this Society was held at the Caledonian Hotel, Adelphi Terrace, Strand, on Monday evening last, Mr. C. H. CURTIS, in the Chair. The minutes of the last meeting were read and confirmed. Eight new members were elected. One lower scale member asked to be allowed to pay the higher scale, which was granted. Eight members are receiving sick pay. Messrs. H. M. POLLETT & Co.'s estimate for printing 1000 copies of the rules was accepted. The secretary produced the receipt for £55 0s. 8d. paid to the widow of the late Mr. Michael Davis, being the amount standing to his credit in the ledger. A letter of thanks from Mr. H. SAUNDERS was read, for 7s. per week granted him from the Benevolent Fund, and a receipt for £5 paid to Mr. Saunders from his deposit account was produced. A grant of 10s. from the Convalescent Fund was made to Mr. Joseph Russell (No. 473). The Treasurer reported that he had a balance in hand of £155 5s. 5d.

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period June 2 to June 8, 1901. Height above sea-level 24 feet.

1901.	DIRECTION OF WIND.	TEMPERATURE OF THE AIR.				TEMPERATURE OF THE SOIL AT 9 A.M.			
		AT 9 A.M.		DAY.	NIGHT.	RAINFALL.	At 1-foot deep.		
		Dry Bulb.	Wet Bulb.	Highest.	Lowest.		At 1-foot deep.	At 2-foot deep.	At 4-foot deep.
JUNE 2 TO JUNE 8.									LOWEST TEMPERATURE ON GRASS.
SUN. 2	S.W.	deg. 62.4	deg. 57.0	deg. 71.3	deg. 33.8	ins. ...	deg. 60.1	deg. 57.2	deg. 53.4
MON. 3	S.W.	deg. 60.1	deg. 55.5	deg. 69.5	deg. 47.8	ins. ...	deg. 60.6	deg. 57.5	deg. 53.4
TUES. 4	W.S.W.	deg. 59.2	deg. 51.8	deg. 71.3	deg. 47.3	ins. ...	deg. 60.0	deg. 57.7	deg. 53.0
WED. 5	S.W.	deg. 62.6	deg. 55.5	deg. 75.5	deg. 49.8	ins. ...	deg. 61.5	deg. 58.0	deg. 53.8
THU. 6	N.N.E.	deg. 62.9	deg. 58.0	deg. 72.2	deg. 55.5	ins. ...	deg. 64.0	deg. 58.6	deg. 54.2
FRI. 7	E.S.E.	deg. 59.7	deg. 51.8	deg. 68.5	deg. 46.5	ins. ...	deg. 62.3	deg. 59.0	deg. 54.5
SAT. 8	E.S.E.	deg. 60.1	deg. 53.3	deg. 71.0	deg. 48.0	ins. ...	deg. 61.6	deg. 59.1	deg. 54.7
MEANS ...	...	deg. 60.1	deg. 54.7	deg. 71.3	deg. 47.0	ins. ...	deg. 61.4	deg. 58.2	deg. 54.0

Remarks.—Another week of hot, dry weather, with strong winds on two days.

GENERAL OBSERVATIONS.

The following summary record of the weather throughout the British Islands, for the week ending June 8, is furnished from the Meteorological Office:—

"The weather over all the western and northern parts of the kingdom was rather unsettled, with occasional slight rain, during the earlier half of the period; in the south and east it was fair and dry throughout the week, and this condition gradually spread to the northern and western districts also

Thunder and lightning were experienced in isolated parts of Great Britain, mostly during the early parts of the week.

"The temperature continued rather above the mean in England and Scotland, but was only just equal to the normal value in Ireland. The highest of the maxima were registered, as a rule, on the 8th, and varied from 79° in Scotland, E., and 77° in the Midland Counties, to 74° in England, N.E., and 73° over Ireland and the Channel Islands. The lowest of the minima occurred on the 15th, and ranged from 34° in the Midland Counties and England, N.W., to 43° in England, S.W., 44° in England, S., and to 47° in the Channel Islands.

"The rainfall was in less than the mean in all parts of the Kingdom. In England south and east there was none.

"The bright sunshine exceeded the mean in nearly all districts, the excess in most cases being considerable. The percentage of the possible duration ranged from 67 in England, E., and 66 in the Channel Islands, to 40 in Ireland, N., and 37 in Scotland, N."

THE WEATHER IN WEST HERTS.

A similar type of weather has now prevailed for nearly a month, its chief characteristics having been warm days and moderately cold nights, with clear skies, light airs, and no rain worth mentioning. On the warmest day during the past week the temperature in shade rose to 79°, and on the coldest night the exposed thermometer fell to within 4° of the freezing-point. The ground temperatures are now unusually high, being 4° warmer at 2 feet, and 5° warmer at 1 foot deep, than is seasonable. No measurable rain fell during the week; indeed, the total measurement for the last four weeks amounts to less than half an inch. The dryness of the ground is shown by the bare-soil percolation gauge through the 2½ feet of soil, in which no rain-water at all has now come for several days. The sun shone on an average during the week for nine and a half hours a day, or three and a half hours a day longer than is usual in the early part of June. The winds remained very light until the 11th, when a change to light westerly breezes took place. The air still continues unusually dry for the time of year. The first Tea Rose came into bloom in the open ground in my garden on the 5th inst., which is six days earlier than its average date of flowering in the previous fifteen years, and earlier than in any year since 1896.

THE SPRING.

Taking the season as a whole, this was a spring of about average temperature. As regards vegetation the most noteworthy feature was the absence of any unusual cold. On the coldest night in March the exposed thermometer indicated 16° of frost, on the coldest night in April 10° of frost, and on the coldest night in May 3° of frost. The average extreme minima for these three months being respectively 18°, 12°, and 7° of frost. The aggregate rainfall was nearly an inch in excess of the mean for the quarter, and only once before in the last twelve years has the total measurement been as large, showing how extremely dry our recent springs have been. Although on the whole a wet season, there occurred during the course of it two very dry periods, each lasting about three weeks. The sun shone on an average for more than half an hour a day longer than is usual. *E. M., Berkhamsed, June 11, 1901.*

ANSWERS TO CORRESPONDENTS.

ANSELLIA AFRICANA: *Hill Grove, Pontypool.* A very fine inflorescence than which we do not remember to have seen a better. We may have something to say about the species in our next.

BEGONIA: *J. B.* The rust-like disfigurement of the leaves is due in the first instance to mites (a species of *Tarsonymus*), which may be destroyed by immersion in tobacco-water. After they have punctured the leaves, fungi soon attack them. See *Gardeners' Chronicle*, Nov. 9, 1895, p. 544, and Nov. 16, p. 586.

BOOKS: *Horticultural Directory.* A. S. This book is published by the proprietors of the *Journal of Horticulture*, at 12, Mitre Court Chambers, Fleet Street, London, E.C., at 1s.—*E. de Mattos* In the *Garden Calendar*, by T. W. Sanders (London: Hamilton, Adams & Co., Paternoster Row), a list is given of seasonable vegetables and fruits for each month.—*E. K. Diseases of Trees*, Hartig; translated by Somerville and Marshall Ward (Macmillan & Co., Ltd.). *Disease in Plants* by Marshall Ward (Macmillan & Co., Ltd.); *Treatise on Plant Diseases*, by G. Massee (Duckworth & Co., London). We do not know the prices, which should be advertised. There is no weekly journal on the subject.

CARPET BEDDING: *W. T. Messrs. H. Cannell & Sons, Swanley*, publish a book of plans of carpet-beds, with descriptive matter attached.

FASCIATION IN PYRETHRUM: *W. S.* A good illustration of a very common occurrence. We presume it arises from an excess of food—over nourishment.

"FORERIGHT" BUDS AND SHOOTS: *F. E. G.* Those buds and shoots which in garden parlance are called foreright are those that grow from the branches at a right or an acute angle with the plane of the wall or fence, which cannot for that reason be conveniently laid-in as shoots flat against the wall, &c. In Peach and Nectarine-trees it is usual to rub them off whilst young, and in other fruit trees to shorten them to a few buds in length after they have made, say, 6 to 8 inches of growth, and to still further shorten them at the winter's pruning. To avert crowding of the foliage, they should not be left at less than 8 inches apart, all intermediate ones being rubbed off whilst young.

GIANT BEANS: *C. G.* We have seen specimens of these in former years, and took them to be a variety of *Phaseolus vulgaris* or Kidney Bean, but with longer pods than any variety described by Vilmorin.

GOOSEBERRIES DYING: *V. S. F. W.* The bushes may be dying from some cause unknown to us, or they may be suffering from an infestation of red-spider. The bronzing of the berries and the concave form of the leaves seem to point to this as the cause.

GRAPES: *J. M.* The berries are affected with spot. Burn as many as you can, and spray the rest with Bordeaux Mixture, or with sulphide of potassium, ½ oz. to a gallon of water. *Magnolia Soulangiana.*

HEAVY BUNCHES OF GRAPES AT EDINBURGH SHOWS: *J. F.* Mr. Curror showed a bunch of Trebbiano weighing 26½ lb., September 16, 1875; and Mr. Dickson one of White Nice, weighing 25 lb. 15 oz., on the same occasion. The record is to be found in the *Gardeners' Chronicle* for September 18 of that year.

LATE BROCCOLI OMEGA: *W. T.* The heads sent were very large and firm, and owing to the leaves being numerous and closely folded over the curd, the colour was nearly white. It should make a good marketing variety, and one useful in ordinary country households, but is too coarse for the best tables.

LILIES: *C. W. D.* The development of the flowers has clearly been arrested at a certain stage, but why we cannot say.

MEDINILLA CURTISH: *Medinilla.* This plant was introduced from Sumatra in 1884. *Medinillas* require very light, sunny quarters in the stove, not much shade being afforded at any time; and they will endure a temperature of from 65° to 70° by night, and 90° by day. Young plants that are not wanted in flower, as also older ones, may be shaded for a few hours with thin scrim. If young plants are acquired in the spring, they may be partly shaken out, and potted, say, in March, using as a compost of slightly sandy loam, with a small quantity of peat or leaf-mould mixed with it. Stop the shoots once in July and once in August if this be needed. A slight shift may be given in July, or perhaps top-dressing only, whichever may be required. The plant may be wintered in the stove in a light part of it, and the soil kept moderately dry. It will depend on the strength of plant if it shall be allowed to flower the following spring, that is, if flower-buds show. Plants of three to four years of age are sure to do so if the treatment given above has been adhered to. After flowering, a slight cutting back of the shoots is desirable, and when a new break is made, the plant should be turned out of the pot forthwith, and have a little soil taken from the bottom, top, and sides of the ball, and be placed in a clean pot of the same size as that out of which it came, or one slightly larger, and be grown-on as before. A shift may be required in June or July; but the main thing is to get the wood matured, and if growth be made late in the summer, it seldom gets matured. We think that with a due use of artificial manures, the excessively big pots *Medinillas* are grown in usually might be dispensed with.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*C. A. B.* They are both varieties of *Iris sibirica*.—*W. H. D.* *Geum rivale*.—*M. D., Wyllam.* 1, *Sanicula europæa*; 2, probably *Cerastium latifolium*, but the plant should be sent in flower.—*G. E. Y.*

Fraxinus Ornus, "Manna Ash.—*Cockel.* *Calceolaria pinnata*, a half-hardy species.—*J. F. S.* Not in flower, probably *Amelanchier canadensis*.—*J. J. F.* From the leaves only, we conjecture it may be *Amygdalus nana*.—*Bradfield.* 1, the old double white Pink; 2 seems to be the Pink known as Mrs. Sinkins; 3, the Pyrethrum we cannot name.—*W. G. B.* *Lychnis dioica*, double-flowered variety, native; nat. ord. *Caryophyllaceæ*.—*J. K.* 1, *Spiræa opulifolia*; 2, *Rhus Cotinus*; 3, probably *Exochorda grandiflora*—no flowers; 4, *Cotoneaster affinis*; 5, *Barberis vulgaris*; 6, *Spiræa aræfolia*.—*J. T. Darford.* 1, *Cattleya Mossiæ*; 2, *Cypripedium barbatum* superbum; 3, *Odoatoglossum odoratum*; 4, *Cypripedium barbatum*; 5 and 6, varieties of *Odoatoglossum citrosum*.—*H. G., Norfolk.* *Sprekelia formosissima*, an *Amaryllid.*—*Reader.* 1, no flowers; 2, *Cotoneaster*, no flowers; 3, *Olearia dentata*; 4, *Allium Moly*; 5, *Helleborus fetidus*, no flowers; 6, *Funkia*, no flowers.—*J. G. M.* *Muscari comosum* var. *monstrosum*.—*R. R.* *Odoatoglossum* × *Adrianæ*, a fine variety.—*H. J. C.* *Syringa Josikæa*.

PEACH-LEAVES AND ROOTS: *J. F., G. F., and others.* The leaves themselves showed no indication of the cause of trouble. The leaves fall prematurely, and the specimens sent were shot-holed. We do not know whether the shot-holes were on the leaves before spraying. Duggar, of Cornell University, in 1899 showed that Bordeaux Mixture may cause shot-hole spots, if badly prepared or used too strong on the Peach. The fall of the leaves may also occur without assistance from a fungus. The roots sent by *J. F.* were galled; those taken from pot-plants were small roots, and did not show this very well, but the old roots from plants in the open ground were badly knotted at places, as if the main root had swollen and died, then a crop of young roots arose near such places. These galls were examined, and a fungus nearly allied to a *Cladosporium* was found. Whether this was the cause or only a result cannot be stated. The soil looked heavy and lacked freeness, and would be improved by having lime-rubbish incorporated with it. Are eelworms likely to be the cause of the ill-health of the plants?

POTATOS FROM HAULM: *W. W.* Not uncommon under the circumstances you mention.

PLANT FROM THE TRANSVAAL: *A. B.* *Scilla*, probably *polyantha*.

PRIMULA OBCONICA: *A. B. R.* Yes; you have not read your *Gardeners' Chronicle* very diligently. We think actual contact is necessary.

ROSE: *S. K.* We are unable to name this old variety. Send it to some nurseryman who makes a specialty of Roses.

SEEDLING CARNATION: *C. Allen.* Send to some Carnation specialist. A new seedling must be possessed of special good qualities in the flower, and in habit, floriferousness, in colour, &c., to meet with general acceptance by the florists.

SPARROWS: *W. P.* The birds are mostly caught in nets by night. Ivy-covered walls and tree-stems are favourite roosting places for these birds, and nets are quietly placed against the wall, &c., from top to bottom, and the birds caught as they fly on being disturbed by tapping the Ivy with long sticks. Poisoned grain was once employed, but as other and more useful birds were destroyed, and accidents happened to children, a law was very properly passed forbidding this method of reducing the sparrow plague. Trap-nets are also used, together with a bait to attract the birds. We are unable to give you the names of any sparrow-clubs, or of secretaries of such.

TOMATO DISEASE: *F. W. C., and W. R. S.* Your plants are affected with a fungus, *Cladosporium*, often described and figured in these columns. Burn all the affected plants, and syringe the others with sulphide of potassium ½ oz. to a gallon (liver of sulphur).

COMMUNICATIONS RECEIVED.—*W. Carruthers*—*M. Moser*, Versailles—*M. Michell*, Geneva—*G. G. Van Tubergen*, Haarlem—*N. E.*, Dahlemark—*P. Watt*—*W. M.*—*A. Fry*—*Dr. H. R.*—*E. J.*—*G. G. W.*—*J. Winn*—*B. W.*—*H. C.*—*H. Markham*—*A. W.*—*J. O.E.*—*C. T. D.*—*D. R.*—*J. K. J.*—*H. Rogers*—*W. H.*, the money has been paid to Treasurer of *R. G. O. F.*—*R. D.*—*R. P.*—*G. Winter*—*D. Scott*—*E. B.*—*F. W. C.*—*J. McC.*—*P. M.*—*T. J.* Hebdon—*E. M. G.*—*Kelway & Sons*—*N. D.*, Gothenburg—*J. F. Duthie*, Mussoorie.

(For Markets, see p. ix.)



CORYPHA AUSTRALIS IN THE GARDENS AT PENJERRICK, CORNWALL.
PHOTOGRAPHED BY G. W. MEYER.

THE

Gardeners' Chronicle

No. 756.—SATURDAY, JUNE 22, 1901.

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THE MANTLING VINE.

THE great antiquity of the Grape-vine is a matter not open to dispute, for its leaves have even been discovered in the tufa at Montpellier, and Grape-seeds have been found in several lake dwellings which belong to the Bronze age. It has been cultivated for many thousand years, for we are told that "Noah began to be an husbandman, and he planted a vineyard;" whilst Egyptian records of Grape-growing and the making of wine carry us back to an even earlier date.

The Vine seems to have been introduced into England in the second or third century after Christ, for, according to Tacitus, "Solum, præter oleam vitemque et cætera calidioribus terris oriri sueta, patiens frugum, fæcundum." Yet Stow says that the Emperor Probus, who lived towards the end of the third century, "permitted the Brytains and others that they might have Vines and make wine." Nearly forty vineyards are recorded in *Domesday Book* as existing in the South and East of England, and every abbey or monastery of any importance in the southern half of the country seems to have had its vineyard in the middle ages. Holborn, Westminster, and Vine Street, Piccadilly, were sites of old Vineyards and wine-presses, though the best Grapes and the best wine seems to have been produced in Herefordshire, Shropshire, Gloucestershire, and Worcestershire. Of course, all these vineyards were

in the open air, the Vines being "held up with poles and frames of wood, and by that means it spreadeth all about and climbeth aloft; it joyneth itself unto trees, or whatsoever standeth next unto it." It is to be feared, however, that though very fair wine may now, as formerly, be made from Grapes grown in the open in this country, the fact that better wine can more easily be produced across a few miles of sea will effectually prevent any considerable revival of the English vineyard. The decorative value of the Grape-vine is so great, that one can but regret this destiny.

Few climbing plants surpass in beauty the various species of Vine which are found wild in Asia and North America. In a *Catalogue of Plants* by a "Society of Gardeners," issued in 1730, the list of decorative Vines then grown is as follows:—"The Parsley-leaved Vine, the Wild Virginia Vine, the Fox Grape, the Blotched-leaved Vine, the Strip'd-leaved Vine. These sorts being cultivated by the curious in botany, we thought proper to add in this place the several sorts cultivated in the vineyards, &c. We shall refer to a proper work, and beg leave to add another plant in this place, which, altho' not strictly agreeing with the others in all its characters, yet being nearly allied to them, and for want of a better place may do well enough in this: the Virgin Vine, or Common Creeper." We seem to have lost the Striped-leaved variety, but our gardens now contain several additional species of great and individual beauty. Still, few surpass the common Grape-vine (*Vitis vinifera*) and its varieties, *apiifolia* (the Parsley-leaved Vine) [a sweetwater Grape. Ed.], with delicately and deeply-cut foliage, and *purpurea*, with its leaves coloured deep purple all through the summer and autumn, when they are allowed to ramble at will over arches, trellises, or out-buildings. A Vine which has been grown in English gardens since the middle of the seventeenth century is the North American *V. æstivalis*, or Summer Grape, which is, like most of the Vines, graceful and pleasant, and in some autumns takes on a brilliant red colour.

Another old species introduced into this country 200 years ago is the Tree-vine (*V. arborea*), with beautiful deeply-divided foliage. This species is seen to best advantage when grown as a sprawler, as it is somewhat bushy in habit. One of the best and most vigorous of the American species is the Northern Fox Grape (*V. labrusca*), the leaves of which, however, usually fail to colour in autumn. None of the true American Grape-vines take on so rich an autumn tint as some of the varieties of *Ampelopsis*—now classed among the Vines—though the strong-growing *V. californica* is a near rival in that respect. But even the old Virginian Creeper is surpassed by the well-known Asiatic species, *Ampelopsis Veitchi*, introduced by the late John Veitch, and first described as a garden plant in the *Gardeners' Chronicle*, p. 838, vol. i., 1869. It has now become generally cultivated in this country for the beautiful and very varied forms of its leaves, for its hardihood and vigour, for the richness of its autumn colours, and for its useful habit of clinging to the surface of wall or building.

Of the true Asiatic Vines—apart from the varieties of *V. vinifera*—the one most frequently grown in England is probably the Hop-leaved Vine, which often bears, especially if grown against a wall, quite a crop of little blue Grapes, is very beautiful in habit,

and possesses delightful foliage. But supreme among the decorative Vines is the vigorous, large-leaved, Japanese species, *V. Coignetiae*, which in its native home clammers over the tops of the tallest trees. Through the summer the large green leaves have their under surface clothed with fawn-coloured down; but it is in autumn that the plant is most glorious, for then its foliage assumes every shade of crimson, orange, rose, yellow, and scarlet.

The pleasure to be derived from the Vines is increased by the delicious fragrance which many of them (in particular *V. riparia*, a hardy American kind), yield, especially when in bloom. Indeed, Bacon referred to the scent of the flowers of the Vine as among the sweetest in the garden. Most of the Vines can be easily grown in any garden, if the soil be deeply dug, be well enriched with rotten manure, and be kept moist yet not water-logged. They are readily increased by means of cuttings or eyes, though *V. Coignetiae* is an exception in this respect, and is best raised from imported seeds. *Harry Roberts.*

NEW OR NOTEWORTHY PLANTS.

IRIS EWBANKIANA (*Foster, sp. n.*).

(See fig. 152, p. 407.)

I RECEIVED from Messrs. Van Tubergen last autumn some rhizomes which, though small, were obviously those of an Iris belonging to the *Oncocyclus* or to the *Regelia* type. They flowered this spring, and seem to me to be those of a very distinct and undescribed species.

The rhizome has the ordinary *Oncocyclus* features. The leaves are glaucous, narrow, and somewhat falcate, not so falcate as in *I. acutiloba*, but, in my specimens, more falcate than *I. meda*, more falcate, for instance, than is shown in the accompanying figure. I do not give the dimensions of the leaves or of other parts, since I presume the figure is life-size, and if so, the plant sent by Messrs. Tubergen, from which the figure is drawn, was more vigorous and in all respects larger than any of my plants.

The scape, some few inches high, bears a single flower. The spathe valves are narrow, pointed, not inflated, reaching above the tube, and quite green, at and some time after flowering. The outer sepal (fall) is lanceolate and pointed, with a broad but not very dense beard (cushion) of stout yellow hairs, tipped with brown. The ground colour is a creamy white, marked by conspicuous irregular or jagged veins of the *Oncocyclus* type, of a brown-purple colour. These are thicker and more jagged on the claw than on the blade. In front of the beard is a small but conspicuous (much smaller in my specimens than in the figure) "signal" of a dark purple, almost black colour, formed by the local swelling and confluence of three or four of the veins. The purple-brown veins are sufficiently close, but no more so than to give, except for the signal, the effect of a grey tone when the flower is viewed at a distance.

The inner petal (standard) is ovate-lanceolate, of a creamy-white ground colour, veined all over with jagged brown-purple veins, which are broader, more jagged and broken over the lower than over the upper part of the petal, where they are narrower, deeper in colour, and more even. Over the claw, and over the median parts of the blade, the veins tend to break up into a linear series of dots. Along the mid-line of the claw is a linear incipient beard composed of about a dozen yellow-brown tipped hairs. The style, deeply vaulted from side to side, has an upper surface of almost uniform chocolate-brown, and an under surface lighter in colour, with brown-purple spots on a yellowish ground. The crests are fairly large, quadrate, marked with thin, broken, brown-purple lines. The filaments of the anther are short and brown, the pollen of a dingy yellow colour. The bright

green cylindrical thin-walled ovary is longer than the tube which is marked with vertical brown-purple stripes. The swollen, still green capsule is cylindrical with six low ridges. Seeds not seen.

The plant was sent to Messrs. Van Tubergen by their collector from the mountain range which separates Persia from Trans-Caucasia, 120 versts to the west of Askabad.

It comes near to *I. acutiloba* and *I. meda*, which are also Persian *Oncocyclus* Irises, but is sufficiently distinguished from both by its lanceolate outer segments, which are extended horizontally, and show no tendency to be recurved, as is conspicuously the case in the above two Irises. The small "signal" is also a marked character.

It cannot be said to be a really handsome Iris, yet it has charms of its own; a friend who saw it called it a "very perky little Iris." I am inclined to think that it may vary in colour; if so, some of the varieties might be quite beautiful. I, at least, admire it sufficiently to be able to join in Messrs. Van Tubergen's wish that it should be called after my friend the Rev. H. Ewbank, whose love and success not only with Irises as with other flowers, but specially with *Oncocyclus* Irises, is known to all Iris lovers. *M. Foster, Shelford, June 15, 1901.*

RIDGLANDS, WIMBLEDON.

NEAR as it is to London, the pretty garden of Colonel Longstaff nevertheless contains a very large and varied collection of hardy and half-hardy trees, shrubs, perennials, and bulbs, natives of different quarters of the globe, and all thriving in a far more satisfactory manner than is generally the case in gardens, even in the open country. The chief reason of this pleasant state of things is that Mrs. Longstaff and every member of the family are sincere lovers of plants and of the garden; and Mr. Weedon, who has been for many years head gardener at Ridglads, knows the garden thoroughly, and is interested in everything in his charge. The garden is surrounded by a belt of trees and flowering shrubs, beneath which suitable flowering perennials are planted. Recently, the double scarlet Thorns, Weigelas, Philadelphus, &c., are making a good show; and the Iris, Pæonies, and other showy flowers in the borders are fresh-looking and bright. In shady places beneath the trees a carpeting of *Saxifraga umbrosa* has been arranged, which is now thickly set with pretty white and pink flowers, making an effective show where little else would grow.

At the end of the smooth stretch of lawn is a sunk garden, the chief care of the young ladies of the family, its rocky bank on one side being covered with an old "cluster" Rose, a perfect mass of flowers. In other parts of the garden are smaller gardens, each arranged by some member of the family, and all enriched by pleasant souvenirs personally collected in Switzerland and in other parts of the world.

The principal sunk garden has sandstone rockery arranged in nooks suitable for different subjects, the higher portion being planted with *Saxifrages*, dwarf *Phloxes*, *Sempervivums*, and other close-growing species, most of which are now covered with bloom. In the walk leading to this sunk garden on one side the Tree or Moutan Pæonies are finely in bloom, and all around the garden, Roses and flowering shrubs, including also some Apple and other fruit trees, are most tastefully and naturally arranged. In one little rocky bay the dwarf species of Thyme, *Aubrietias*, blue *Veronicas*, and pink *Armerias* make a pretty group. Beside them is a large patch of *Dryas octopetala*, a good example of *Azalea procumbens*, *Linnaea borealis*, flowering for the fourth year in succession, which is not a common circumstance; *Rubus arcticus*, *Gaultheria procumbens*, neat bushes of *Pernettya mucronata*, now in flower, and later to be handsome in berry; large patches of *Anthericum liliastrum*, *Camassia esculenta*, *Digitalis lutea*, *Anemone decapetala*, and dwarf *Iberis*.

On the higher portion of another section, plants of *Azalea indica* have been growing in the open for some years, and in the case of one specimen of *Azalea indica alba*, it flowered and bore seeds, which fell over the moist surface of the sandstone rock beneath, on which the seeds germinated, and a patch of sturdy little plants on the bare face of the rock is the result. In front is a plant of *Rhododendron ferrugineum*, in flower; *Andromeda polifolia*, and other similar hard-wooded things, in bud or bloom.

left out, while the tenderer are sheltered during the winter. At present it contains the Japanese *Raphiolepis ovata*, well in flower; strong specimens of *Citrus trifoliata*, *C. medica*, and *C. aurantium*; *Metrosideros floribunda*, and other things usually seen in greenhouses.

The greenhouses have some Cacti, *Gerbera Jamesoni*, and other showy things in flower; outside are some Water Lilies, in tubs; and the whole garden gives an excellent example of planting for continuous effect, the spring bulb display, which is



FIG. 149.—IRIS "PARAVAR."

Each section of the garden has its special feature. In one part, on the higher rockery, the *Helianthemums*, or Rock Roses, give great patches of charming colour; in another, the dwarf *Campanulas* are prominent; farther on, large patches of blue *Lithospermum prostratum*, with variously tinted *Aquilegias*, *Clematis*, and a few tufts of *Mariposa* Lilies, make a pretty combination; and in the borders, the *Trollius*, *Carnations*, *Pinks*, *Sweet Williams*, Lilies, and other showy flowers are so disposed as to be very effective without the danger of encroaching on the smaller and more delicate species.

One large bed, with a permanent edging of Lavender, Rosemary, and Lavender Cotton, is used for tender shrubs, some of the hardier of which are

now over, having been as beautiful as that now in its beauty, and which will be succeeded in autumn by an equally effective and interesting show of flowers.

IRIS PARAVAR ×.

THIS interesting and pretty Iris is one of the few hybrids which have been obtained between the Irises of the sub-genus *Oncocyclus* and the *Pogonirises*, its parents being *I. paradoxa* of the former, and *I. variegata* of the latter section. I have no positive information regarding the hybridiser, but I have an impression that I was told some time ago that it originated with Sir M. Foster, in his garden at Shelford. The flower illustrated (fig. 149) was

produced from a plant obtained from Messrs. Wallace & Co., of Colchester, last autumn, although I had previously flowered this hybrid, but unfortunately lost the plant through its becoming overgrown by others in a border. This time it has been grown on a low part of the roof of my garden-study, where I am experimenting with the *Oncocyclus* Irises, and where it was covered with a frame during winter, although air was always admitted and frost was never excluded. The plant produced two stems, each of which carried two flowers, and these generally follow in their colouring the form of *I. paradoxa*, called *violacea* by Mr. Baker. "Purple-black" is Messrs. Wallace's description of the colours; but this does not take into account

hybrid, it owes much of its colouring to *I. paradoxa*, but it has more brown on the falls than *paravar*. It was grown alongside *I. paravar*, and seems, although dwarf, to be of good habit, and likely to be a free grower. *S. Arnott, Garsethorn, by Dumfries, N.B.*

ORCHID NOTES AND GLEANINGS.

ANSELLIA AFRICANA.

A NOBLE inflorescence of several branches, and bearing one hundred and seventy-three fine flowers kindly sent by E. Fowler, Esq., Hill Grove,

ornamental when not in flower; but when the stems are furnished with their large terminal heads of flowers, it is one of the most striking and elegant of tall-growing Orchids. It thrives as well in an ordinary plant-stove as in an Orchid-house, and its culture is of the simplest, it requiring an abundant supply of rain-water when growing, and a drier and cooler rest after flowering, until growth commences again.

The tropical African *Ansellias*, known as *A. confusa*, *A. nilotica*, and *A. congoensis*, have the same general appearance and colour of flower as this which is commonly found in gardens as the old *A. africana*. From the Natal side comes the dwarfer and paler flowered species *A. gigantea*, also called *A. africana natalensis*, and *A. lutea*.

A singular dwarf species was recently shown by Sir Trevor Lawrence, Bart., as *A. humilis*. It has even larger and darker-coloured flowers than *A. africana*, produced on a plant scarcely a foot high.

COUNDON COURT, COVENTRY.

It would be difficult to say whether the *Odontoglossums*, *Phalænopsis*, *Dendrobiums*, *Cypripediums*, or *Cattleyas*, are best cared for in Mr. G. Singer's garden, at any rate, all those in a growing state show wonderfully robust breaks and fine growths. Whilst those in flower show that much skill and attention have been bestowed upon them, Orchids in this collection are grown considerably cooler than in many other gardens, and they show a sturdiness consistent with this kind of treatment. Spot in Orchids is said by many growers to be the result of a too hot and moist atmosphere, with insufficient ventilation, as it especially attacks *Phalænopsis*. The *Phalænopsis* here come in for a share of the cooler treatment accorded to other species, and certainly more robust, healthy, or finer plants one could not wish to see than those Mr. Collier has the charge of.

The more notable plants in flower at the time of my visit were *Odontoglossum crispum*, including some finely spotted varieties, good forms of *Cattleya Mossiae*, *C. M. Reineckiana*, *C. Mendeli*, *Lælia purpurata*, *Vanda suavis*, a very fine *Lælio-Cattleya Macfarlanei*, and a splendid *L.-C. Lady Wigan*. A well shaped and brilliant flower is now open of a *Cypripedium*, said to be a cross, *ciliolare* × *bellatulum*. *A. Ingram.*

THE FERNERY.

NEPHROLEPIS.

ALL varieties of *Nephrolepis* make effective decorative plants, and they were formerly regarded as being only suitable for the warm fernery; yet some of them have now proved to be among the most serviceable for ordinary decorations, and are extensively grown for market in this country and in America. It is the true form of *N. exaltata* which finds most favour, and I may here add that in America this is generally known as the Boston Fern, or *N. bostoniensis*. I was for some time in doubt as to the identity of the American and English forms, but friends from America who have carefully compared them assure me that they are identical.

Although this Fern makes more satisfactory growth in a higher temperature, it will, if carefully hardened off, stand open-air treatment in the summer months, and is now extensively used as a basket-Fern for both outside and inside decoration, and as a pot-plant for the dwelling it will last as long as the common *Pteris*. Although it may be raised from spores, the best plants are those obtained from the runners; healthy stock plunged in suitable material for the young plants to root into will prove very prolific, and even on the surface of the pots a good number of young plants may be obtained. Potted in a rich, loamy compost, and suspended to the roof by means of wire-hangers, growth is rapid. Owing to the continued elongation of the fronds, the tips are always rather tender, and are easily damaged when moving the



FIG. 150 — IRIS "ALKMENE" ×.

the tawny colours and brown shadings which exist in the flower. It is likely that it will prove to be a much better doer than any of the pure *Oncocyclus* Irises.

This Iris has been called both *paravar* and *parvar*. The former is the more agreeable in sound, but I am not quite certain which it should be called.

IRIS ALKMENE × (fig. 150).

This is a hybrid between *Iris paradoxa* and *Iris Swertii*, one of the *Pogoniris* section, and was raised by Messrs. Dammann & Co., of San Giovanni a Teduccio, Naples, from whom I received the plant last summer. It is of dwarfer habit than *I. paravar*, and is less pleasing in its colouring. Like that

Pontypool, affords a remarkable example of the beauties of this fine old African species when well grown; and the statement by the gardener that it is one of six similar spikes borne on the plant, indicates that it must be a grand object, and one of the finest specimens of its kind ever seen. It is an example of the best old type from the West Coast of Africa, and its flowers are large for the species, and finely coloured. The flowers are about two inches across. The sepals and petals are pale greenish-yellow, heavily blotched with purple. Lip bright yellow, with purple markings on the basal half. The plant is of noble habit, its tall stems clad with broad and long bright green leaves, giving it a Palm-like appearance, rendering it very

plants about; but they will stand full exposure to the sun without suffering—this, of course, applies only to such as have been grown on in a light, open position. When grown on an ordinary stage or bed, the fronds have no chance of proper development, and unless given much space, they shade each other, and consequently the drooping fronds are crippled at their points.

N. davallioides furcans is another useful Fern, but not quite so hardy as *exaltata*. The true form of *N. davallioides* is quite distinct from the furcated variety, and is not much grown here; but I have seen an illustration in the *American Florist*, under the name of *N. Washingtoniensis*, which appears to be the same thing, and is spoken of as a valuable market Fern. It certainly makes a very beautiful plant, but the great length of fronds renders it unsuitable for many purposes.

N. ensifolia is another long-fronded species, but this has harder fronds, and makes a grand plant for large baskets.

Of the smaller-growing species, *N. pectinata* and *N. philippinensis* are the most useful. *A. Hemslay*.

FORESTRY.

SPONTANEOUS GROUPS OF SEEDLINGS.

Nothing strikes a student of English forestry more forcibly than the almost utter disregard which is paid to the possibilities which exist of regenerating woods by natural means. A wood can scarcely be found of any size which does not contain one or more patches of seedlings which have managed to reach a fair size before neglect or ground-game have wiped them out, or possibly been deliberately cleared away because they interfered with a few planted trees of doubtful value. It seems to be an accepted principle with many to regard every unplanted tree as a weed until it has reached a size approaching that of the majority of the trees in the wood, although the value of the seedling species as timber may far exceed that of most trees which are planted. There are some species, especially among the Conifers, which produce ripened seed so rarely here that natural regeneration is almost unknown with them; there are others which ripen their seed, but whose seedlings are so delicate, and require such a particular seed-bed, that the young plants never survive their first year, or the seed never gets beyond the germinating stage. With such species, artificial rearing and planting outside their native habitat are the only means of getting them established or re-established, although an occasional seedling here and there may create hopes which are never realised. Given plenty of properly ripened seed, the chief difference in the power of seedlings to establish themselves in any ground seems to be the absence or presence of raw humus.

With broad-leaved trees, large quantities of dry, undecayed leaves and twigs render the surface of the wood too loose, and subject to variations of drought and moisture to enable the radicle of the seedling to get a secure foothold, and maintain it in a healthy state until it has reached the firm mineral or well-decayed vegetable soil beneath. Species with strong, penetrating radicles, such as the Oak, Walnut, Chestnut, &c., are least affected by these conditions, but they apply more or less to all seedlings.

In Conifers, a far greater sensitiveness to the presence or otherwise of this raw material is shown. The texture of evergreen Conifer-leaves or needles is harder, and less easily decomposed than the leaves of hardwood trees, while the seedlings themselves are of a more delicate nature. The Scots Fir, as we have already pointed out in these columns, is the most difficult of all native or European trees to regenerate under the shade of the parent tree; while Weymouth Pine (*Pinus Strobus*) and Silver Fir are frequently seen springing up in thick woods. Tough rank grass or dense growths of weeds and rubbish are effectual barriers to the re-

generation of any species, and this accounts for its absence in thin, neglected woods, where the surface had been early occupied by such crops. On the other hand, the best examples are seen where the parent trees have stood close and thick until they have reached a seed-bearing stage; the seedlings in such cases finding the ground clear for their growth. Soil, moisture, and chemical and physical character of the surface-soil, all exert a more or less powerful influence upon the process, and a favourable spring following a good seed-year is an important element of success.

But we hear a swelling chorus of enquiry "What about rabbits?" Well, of course, plenty of rabbits mean that no seedling of any importance ever lives long enough to be worth considering, and therefore such cases do not concern us. But, as I have already stated, natural regeneration can and does go on to a limited extent, in company with a fair sprinkling of rabbits, although the success or failure of the process hangs in the balance for many years, because the little assistance towards success is rarely given when needed. Certain conditions are necessary, however, before regeneration can go on in the presence of rabbits at all; but it is certain that were these conditions more closely studied, and more attempts made to bring them about, the results would justify them in most cases. *A. C. Forbes*.

THE FLOWERS OF JUNE.

SINCE the advent of the recent providential rains, which were preceded by desolating north-eastern winds, our gardens and their surroundings have assumed a fairer and fresher aspect. The spring flowers, with the latest of the Tulips and Narcissi, have faded, after a long and most memorable season of most luxuriant bloom, and the reign of the Rose has just begun. My earliest variety of the "Queen of the garden" has been Clara Watson, one of the finest of the hybrid Teas, whose first flower expanded on June 4. This grand Rose is generally supposed to have been raised by the late Mr. Bennet, after whose death it was introduced and popularised by Mr. Geo. Prince of Oxford. It comes much earlier with me than it does with many cultivators, as my strongest and most prolific plant of it is grown on a sheltered and warm west wall. Almost contemporaneous with Clara Watson are Clio and Margaret Dickson, very beautiful and free-flowering, and of great value for garden cultivation. I do not know of any Roses more perfectly reliable than these. They are vigorous growers, and so healthy that aphides and Rose-caterpillars rarely affect them to any appreciable extent; they have splendid foliage, and they flower most profusely. Many other fine varieties, such as Marie Van Houtte, Caroline Testout, Madame Alfred Carrière, a very sweetly-scented Hybrid Noisette; Madame Georges Bruant, Hybrid Rugosa, Rosa Harrisoni, and Grace Darling are already in exquisite and fragrant bloom.

The earlier flowering varieties of the Californian Calochorti, and the many-coloured South African Ixias, Sparaxis, and Babianas, whose lives are gracious and beautiful, but extremely short-lived, have already appeared. Of the Calochorti, the finest and most Lily-like in their aspect are the venustus varieties, which usually reveal their delicately-tinted floral treasures on the confines of July. Their hues rival those of the loveliest Orchids, and that is saying much.

Oriental and Occidental Lilies are more vigorous in their growth than they have been for many years. I have, however, had one floral tragedy among these; my grandest specimen of the great Lily of Mount Caucasus, *Lilium monadelphum Srovitzianum*, having been suddenly decapitated by the recent devastating north-easterly winds, which still too frequently prevail. I have, however, other fine plants of this noble Lily, which, like *Lilium auratum platyphyllum*, *L. Washingtonianum*, *L. Henryi*, *L. Krameri*, and many other "gems of

purest ray serene," have survived the terrible ordeals to which they have recently been exposed.

It is somewhat sad to reflect that Nature, who gives us so beneficently out of her seemingly limitless affluence such memorably impressive creations as these, should, without any warning to their proud possessor, suddenly assume the fierce aspect of an infuriated parent, and destroy her fairest offspring. So great has of late been her annihilation of blossoms and embryonic fruit, that I cannot characterise the conduct of Nature in any other way. *David R. Williamson, Wigtonshire*.

NOTES FROM THE CAUCASUS.

(Continued from p. 363.)

TEA PLANTATIONS.—The cultivation of the Tea-plant in the Caucasus has been undertaken, and hundreds of deszatsins (1 deszatin = 10,925 square metres) are already planted with it, and the shrubs are doing very well, so that the cultivation of Tea is now progressing on a large scale in this part of Russia. Already large quantities of Tea are in the Russian market; and I was told by the owner of one of the largest plantations that the Russian Tea-merchants who buy his Tea had promised to take any quantity he could grow. Having tasted Tea made of leaves which had been picked from these plants, and on the spot where they had been grown, I must say that it is no wonder that a Tea of such fine quality is in large demand in the market, although it is not long since its cultivation was started.

Those who know what large quantities of Tea are every year imported from Japan and China may easily form an idea of the great value to Russia of Tea-plantations in the Caucasus.

Success having been attained with the Tea-plant, it is certain that several other things might be grown equally well if the cultivation of such plants as the climate before described would suit were started. It might be worth while to make a trial with the Cinchona, the bark of which Peru, Columbia, Bolivia, and other places, export in millions of pounds. The Cinchonas like a moist climate, and grow in high lands from 500 to 2,000 metres above the level of the sea, in a temperature of from 8° to 15° or 20° Celsius above freezing.

The traveller who comes from the inner part of the Caucasus, and who has passed the south-west part of the main chain of mountains, for instance, the Mamissanawchian mountain, will, as soon as he gets on the territory where the winds from the Black Sea make their influence felt, find a flora which is quite different to that which he saw in the inner part of the country. In the shade of gigantic *Picea orientalis* and *Abies Nordmanniana*, grows a mass of evergreen trees and shrubs; for instance, *Ilex aquifolium*, *Vaccinium arctostaphylos*, which last here reaches 6 feet in height; and *Prunus laurocerasus*—this lovely evergreen bush, with its large shining dark green leaves, has a truly tropical appearance. With these evergreens are associated lovely flowering Ericas, fragrant yellow Azaleas and white Rhododendrons (*Rhododendron caucasicum*), which here grows to the height of from 3 to 6 feet. Lovely is the sight of the steep slopes covered with these beautiful plants. The nearer the traveller comes to the Black Sea, the richer is the flora. Here are found *Quercus pontica*, *Acer Trantvettori*, and the Beech (*Fagus sylvatica*), *Carpinus betulus*, *C. chinensis*, and *Taxus*. This is the only place in Russia where the Laurel grows wild, together with *Carpinus chinensis*, *C. Betulus*, *Fagus sylvatica*, the Sweet Chestnut (*Castanea vesca*), and *Pterocarya caucasica*. Together with these are *Ulmus*, *Tilia*, *Fraxinus*, *Acer latum*, *A. campestre*, and *A. platanoides*. The evergreen

underwood in the forests in the Caucasus gives these a singular appearance, quite different from that of the forests in France or England. There are masses of *Buxus sempervirens*, *Ilex aquifolium*, *Laurus*, *Prunus lauro-cerasus*, and *Rhododendrons*. Here and there I saw specimens of *Ficus Carica*, *Punica Granatum*, *Staphylea colchica*, and *Philadelphus coronarius*. In the forests in the neighbourhood of Batum the rare *Rhododendron* grows, with leaves white underneath—the *Rhododendron Smirnowi* and *Phyllirea robusta*. The above-mentioned *Prunus lauro-cerasus* grows here to an enormous size, and very fast, and the *Rhododendrons* rival it in growth. The vast areas of such shrubberies are quite impenetrable, because of the masses of different climbers, which have a most strange appearance, reaching quite to the tops of the vigorous under-growth, with the high crowns of gigantic Chestnuts and other trees above, forming a dense compact mass. Where there are any openings in the forest, the climbers hang down from the trees around in a most graceful way, like thousands of enormous garlands. The growth is often so extensive and thick, that it is impossible for even a dog to get through anywhere. *Smilax*, climbing *Roses*, *Rubus*, and many other thorny climbers, are twisted together in all directions like enormous cobwebs. It is usual to think of climbers as of plants with thin stems, but here the *Smilax* often has stems that are as thick as a man's leg. The *Rubuses* in a year make shoots 15 to 20 feet long.

Nowhere in Europe is there anything more pleasing and striking than are these valleys in the Caucasus, with rapid little brooks rushing under the high Chestnut-trees, from the tops of which thousands of climbers hang down into the water, whilst the banks on both sides are decorated with luxuriant Ferns. Here stands a green pillar; there another; then yet a third, while several are nearly lying on the ground. They look like masses of verdure, and remind one of the leaning tower of Pisa, but on going nearer they are seen to be mighty Oaks, with stems of several feet in diameter, which on account of old age have fallen over, and lean with their verdant crowns against neighbouring trees, and on a mass of different kinds of Ferns and mosses find a nice ground on which to rest their rotting stems.

Yet a little further is an opening in the forest, revealing a sight not less striking and beautiful. The steep slopes of the mountains are decorated with masses of flowering *Rhododendrons* and *Azaleas*. At a distance this resembles a gigantic bouquet; it is a hill with flowering *Rhododendrons* showing off their colours effectively against the dark green background of *Prunus* and *Laurel*; and the beauty of the scene around is enhanced and completed by masses of splendid Ferns.

In the forests in the Caucasus, as well as in the subtropical forests, where the underwood is very thick, flowering plants are seldom found on the ground. Here and there in the winter may be a flowering *Hellebore*. Only on cleared spaces in the forests, at the sides of brooks and very steep slopes, may be seen grass and flowers—such, for instance, as that of a *Cardamine*.

The Himalayas are known for the many different Ferns there found, and the Caucasus also contains many species. The steep or perpendicular sides of the rocks and mountains are often clothed with them. Ferns are nearly the only epiphytes found here, together with moss; they often entirely cover the stems of the trees in the moist warm valleys, where the air is something like that of a warm greenhouse. No doubt in such valleys the large magnificent Tree-Ferns of the Himalaya would come to high perfection.

Most of the native Ferns of the Caucasus, with the exception of *Struthiopteris germanica* and *Pteris aquilina*, are not very large, but the latter here reaches to a gigantic height. Its fronds sometimes attain 15 feet in height, growing very thickly in large masses, and claiming the ground entirely for themselves, rendering it almost impossible for

anything to grow in the deep shade cast by their leaves. Among the species sometimes met with among these Ferns are *Alnus glutinosa*, *A. incana*, and *Rhamnus Frangula*. The traveller who passes along the shore of the Black Sea will from the steamer at different places observe here and there light green spaces between the forests. They look like patches of cultivated ground, but they are really uncultivated places quite overgrown with Ferns. Where these grow in the neighbourhood of cultivated ground they prove troublesome, as in a short time they overgrow everything in gardens if not thoroughly cleared away.

As I have already mentioned, flowers are scarce where the forests are very thick, yet in other places flowers may be found nearly all the year round. The *Rhododendrons*, *Azaleas*, and *Jasmines* in autumn grow above many different Composites; the ground between these shrubs is covered with a quantity of *Hypericum* and *Cistus*.

I shall not forget a pleasant walk I took from Batum among the mountains along the shore of the Black Sea on the first morning of the year 1898. The day before I had arrived from the interior of Russia, where everybody was well wrapped up in fur cloaks as a protection against 20° Réaumur of cold, cutting winds and whirling snow; yet here in Batum, I could leave even a summer overcoat at home. The high, snowy-white mountains were shining and glittering in the bright sunshine and clear sky, and the thermometer registered 12° Réaumur. Under the green *Rhododendrons* in the forests I picked large bunches of *Violets* and *Cyclamens*, which were flowering here in masses, and in the gardens I added to my fragrant bouquet of *Roses*, *Camellias*, *Chrysanthemums*, and various garden flowers. The *Rhododendrons* are the pride of the Caucasus, and so are the yellow *Azaleas*, *Jasmines*, and the large bunches of yellow blooms which in summer cover the Chestnut-trees.

The flora in this part of the Caucasus must be regarded as quite distinct from the European flora as well as from the Asiatic, and not as a branch of (for instance) the flora round the Mediterranean Sea, or any other district. Thus, there grows here *Dioscorea caucasica*, *Smilax excelsa*, *Andrachne colchica*, *Zelkova crenata*, *Pterocarya caucasica*, *Azalea pontica*, *Rhododendron ponticum*, and *R. Smirnowi*, *Daphne pontica*, *Betula Heddelegi*, *Euonymus sempervirens*, and *Diospyros*, which are not found to any large extent in other parts of Europe, and when found in the west, in Asia, they do not nearly reach the luxuriant development that is seen here in Colchis in the Caucasus, nor do they grow in such large quantities as they do here. Other plants, something like varieties of *Erica arborea*; *Arbutus*, *Andrachne*, *Erianthus ravenne*, *Arundo donax*, *Panacratium maritimum*, *Cistus salvifolius*, *Vitex Agnus-Castus*, *Pinus maritima*, and *Juniperus oxycedrus*, of which numerous examples may be found in the Mediterranean flora, grow here only in the somewhat dryer parts near the Black Sea, or on dry limestone rock. So also the large quantity of climbers is peculiar to the flora of the Caucasus, or rather of Colchis.

In spite of the beautiful subtropical climate, there are very few gardens in this part of the Caucasus, and only now and then has a person with any knowledge of horticulture availed himself of what Nature so liberally offers.

Although, as one may say, every corner of Europe is as fully cultivated as is possible, and such crops are encouraged as suit the climate; yet this district is perhaps one of the finest of all, but so far it has been left quite to itself, and in many places is an impenetrable wilderness. It is impossible not to ask why the greater part of this beautiful useful land is left in wildness and uselessness? Why has no one thought to emulate Japan and its gardens on the shores of the Black Sea, or to transfer the wonderful vegetation of the Himalaya Mountains to the valleys of Calchis? Why let this part remain as a wilderness, instead of doing as the English have done in Ceylon and many other parts? Why not make plan-

tations of Tea and Rice, for which Russia every year sends millions of roubles abroad, when a good part of these millions could remain in the country and enrich the people. A well known Dutch bulb-grower told me himself that he intended to establish bulb-growing on Russian ground, and to cultivate here the masses of bulbs which he yearly sends from Holland to Russia.

The Caucasus would be just the place for bulb-growing. Its hot sunshine in late summer is an important factor for ripening the bulbs, and making them ready for forcing. To work up a piece of ground, and prepare it for any crop, would cost from 300 to 500 roubles.

Manure is very expensive, and in many places not to be had at all. In some of the valleys and in some situations I found the subsoil a heavy rich clay, often covered with a thick layer of humus; while I was struck to see the ground in many other places under the large and thick growing trees on the sides of the mountains only slightly covered with a thin layer of humus. *A. K. Andersson, St. Albans.*

(To be continued.)

VEGETABLES.

EARLY CAULIFLOWERS.

WE had good Cauliflowers ready this season ten days before the late Broccoli was cleared, these from seed were sown during the first week in February. The earliest variety was the Early Dwarf Erfurt, which always produce nice compact white heads—just what is wanted for the dining-room table. Closely following these is First Crop, another most useful and delicious Cauliflower. I find by sowing in the spring, and keeping the plants gradually growing on, better results are obtained than by sowing and coddling all the winter. For example, we had a few which were wintered in cold frames, which could not compare at all with those, and were not so early as the spring sown, and in many cases these autumn-sown plants are apt to bolt, then if one has no spring plants—how vexatious it is. I sow early Cauliflower seed in boxes, and place these in a cool-house, the warmth of which gradually increases with the season. As soon as the seedlings can be handled they are pricked off in other boxes, finally come into cold frames, and are planted out as soon as they are ready, or to a sheltered border. They are planted thickly for early cropping, and they then take much less time to cover up at night, or to afford water.

It is a good practice to have the plants alternate, with a later variety, say, Early Erfurt and Early London, or Snowball, then the one can be cut, and the stem pulled up, and the others left for a few weeks later, which I find is a great gain in point of time and labour. When the weather is dry and bright, as has been the case this season, the garden-engine is brought into use, and the plants given a good syringing, which has a beneficial effect upon the growth. Cauliflowers might have been cut in May, but we did not actually do so till June 1.

I enclose three heads, such as we like to send to table; if you will try them, I think you will say they are all that is wanted in a Cauliflower. I consider the best Cauliflowers are Dwarf Erfurt, Carter's Forcing, Snowball, Carter's Early Autumn Giant, Veitch's Autumn Giant, and in order to obtain nice young fresh heads all the season, small sowings should be made often till the end of June.

LATE PEAS.

All who wish to secure Peas as long as possible, should lose no time now in sowing on thoroughly well-prepared ground—Carter's Michaelmas, and Aristocrat (Veitch). I sowed these varieties last season in June, and gathered plenty of pods in fine condition well into the month of November, and the plants were still growing and flowering when cut down by frost. Late Peas should be well treated. I sent a dish of Peas (Carter's Michaelmas) to the Royal Horticultural Society's meeting towards the end of last October. *W. A. Cook, Wilts.*

SCOTLAND.

PRIMULAS AT KAIMES LODGE,
MIDLOTHIAN.

SINCE Mr. R. Lindsay, formerly Curator of the Edinburgh Royal Botanic Gardens, settled down at Kaimes Lodge, Murrayfield, Midlothian, he has largely devoted the leisure he now has to attending to his fine collection of alpinas. In Veronicas his collection is especially rich, as the pages of the *Gardeners' Chronicle* show in the illustrations of specimens from his garden. There is also at Kaimes Lodge a choice series of species of *Primula* and their hybrids, which Mr. Lindsay grows with more than ordinary success, giving them more direct sunshine than I am in the habit of doing, and a kind of treatment which seems to suit them better than mine. It is not possible, in the space of a short note, to specify all the plants, but a few which were either unusually good or less plentiful on the occasion of a visit late in April may be mentioned. Among these was *P. Kernerii*, a natural hybrid between *P. sub-auricula* and *P. villosa*; *P. Portæ* (*sub-auricula* × *daonensis*), which was very good; a splendidly flowered plant of *P. Clusii*, classed according to the *Primula* Conference of 1886 with *P. spectabilis*; the pretty *P. ciliata purpurea*, and a splendid plant of *P. marginata grandiflora*. *P. carniolica* was also very fine, and the *Primula* known in gardens as *decora alba* was particularly good. *P. pubescens* (*Auricula* × *viscosa*) was also good, and the pretty *P. Lindsayi*, which is from *ciliata purpurea*, was, as it ought to be in the raiser's garden, very attractive. In a greenhouse there were noticed a number of plants raised from *P. verticillata* and *P. floribunda*, those in flower being similar to *P. verticillata*; but a number of younger plants, not far enough advanced to show their characters, showed in some cases the results of successful hybridisation. The flowering of these last may set at rest the doubts some feel about *P. kewensis*. The garden contains many other interesting hybrids, and a number of natural species of uncommon character. *S. Arnott*.

PLANT STUDY IN SCHOOLS.

Dr. James W. H. Trail, Professor of Botany in Aberdeen University, continues indefatigable in promoting in schools the science of which he is so distinguished an exponent. Wherever any considerable number of teachers are gathered together, there you will find Dr. Trail received and listened to by them with the greatest possible pleasure. About a month ago he delivered before a largely attended meeting of the Deer Branch of the Educational Institute of Scotland at Maud, Aberdeenshire, one of his charming and highly instructive addresses. Taking as his subject "Plant Study in Schools," Dr. Trail said the relation of plants brought them into contact with all other natural objects, and they could never know plants well without knowing a good deal about geology and animals. They could never get away from plants in this world. Their whole food came directly or indirectly from plants, and it was worth while to know something about them, and to realise the unity that underlies all Nature's study, and the unity that underlies the whole universe. The aims in studying any side of Nature's study were various, and the results upon the intellectual development in studying the plant side were worth working at it for. Whatever false religion might do to make them believe that the world was very evil, the study of plant life showed that it was a very beautiful world, and that they ought to be thankful to be in such a world. If, however, they, as teachers, looked upon it as an extra burden, he would far rather see it swept away as a course of study, than see it abused. In teaching children plant study, they ought to take a plant and teach them how it lives, the difference between plants, their similarities and unlikenesses, and why these are—not be satisfied with a mere glance at the thing, but try to understand some-

thing about it; and they would find that instead of interest deadening as they went on, the interest would grow more and more, question after question would arise, and curiosity would be aroused. He did not know that children would get any better gift than to feel that, whatever the little worries of life might be, in turning to Nature they got refreshment and strength to go on with the work of life. In commencing the study of plants with the children, they ought not to be too ambitious, but be satisfied with small things at first. Plant-life required very little expensive material to give instruction in. He cautioned them not to teach from books. Books might be of service to teachers, but to prescribe a page or two of a book, and hear a lesson upon it, was not the way to teach children Nature study. Take the plants themselves. These were easy of access to all; and in proceeding with the study, he advised them not to tell the pupils what they were to see, and then make them see it. Rather give them the plants into their own hands, ask them what they saw, and make them discoverers on their own account. Get the idea into the child's mind that nothing was purposeless, that a meaning underlies everything, and find out from them by supplying a motive what was the meaning. Every plant suggested any number of questions, but as teachers they must know a great deal more than they should attempt to teach. Dr. Trail, throughout his admirable lecture illustrated by a number of plants, how instruction should proceed, and cautioned them to use the simplest terms possible. He stated that from an examiner's point of view it was much better science to read papers in ordinary intelligible English than to have a number of technical terms misapplied. Science was accurate knowledge, and not the ability to use a vocabulary of technical terms. In concluding, he illustrated to his hearers how to carry on experiments to show the mode of the growth of plants, and how to take specimens of plants; and he promised, in pursuing their studies, to give them all the assistance he could to identify the different species of plants.

FLORISTS' FLOWERS.

THE GARDEN PINK.

PROPAGATION—POT CULTURE—FORCING—VARIETIES

NOT so stately as the Carnation as a garden flower, but a more hardy garden plant, and as it comes into flower a month or so before the Carnation, it is well worth cultivating in every garden where fragrant and beautiful flowers are valued. The Pink is so easily grown, and would rather do without "glass" than with it. The matter of propagation has to be considered, and I do find that there is considerable difference between the method of it in a dry district in England and a wet district in Scotland. I well remember the delight with which I used to plant my pipings of Pinks on the shady side of a Gooseberry-bush, and I seldom lost any of them; but it will not do to treat them so in the South of England. I layered my entire stock this season, and they have all done remarkably well. By following that method there are no losses, and there is but little or no trouble. Pipings strike fairly well with a little bottom-heat in frames, but they require a good deal of attention, and there are generally some losses. As soon as the layers are well rooted, they should be taken from the plants, and be planted in rows 4 inches asunder, and as much between the plants. They should be planted in nice open stuff, and when they are taken up to be planted, a ball of roots may be taken up with them.

Those who would like to try pipings might do so without any bottom-heat; but it would be as well to use hand-glasses, and the pipings should be put in on the north side of a wall or fence. The smaller growths strike more freely than large ones, whereas the stronger growths do better as layers. As the pipings are taken off, tie each variety together with its label, and throw the small bundle

into a pail of water. The work will be done late in June or early in July, and the pipings can be made where they are put in; cut each one under a joint, and strip off two pairs of leaves. Press them firmly into the soil about three-fourths of an inch, and place a close hand-light over them; the top may be removed at night and put on again in the morning, as the Pinks, even as pipings, do not like a close place to dwell in. In order to succeed well with the Pink it is very desirable to obtain early layers or pipings, and see that they are planted out as I have advised, to put into the beds or borders where they are to flower about the end of September or early in October.

The Pink does not like pot-culture; of course, I allude to what are termed the florists' Pinks. The petals are seldom smooth, nor is the lacing well defined, if the plants are grown in pots, nor do they do well with spring planting. I have proved all these things. I also grow several hundreds of the best laced Pinks in order that I may save seed from them, and even with the best culture the lacing is imperfect. There are forcing Pinks, of course, which do well in pots, such as the various white-flowered varieties, and those of the type of the old Anne Boleyn and Derby Day. They are greatly valued to force into flower, and are charming in the greenhouse during the months of April and May. These require different treatment. The pipings may be taken as soon as the plants come into flower, and they strike roots freely in the bottom-heat of a forcing-house, of which the temperature is about 50° to 55°. In such houses there is usually a propagating-frame for these cuttings, which is kept close, but the Pinks strike as well, and do better, if a square of glass is merely laid over them, resting on the top of the labels, and open all round. The squares of glass laid over the tops of the plants conserves enough moisture to prevent the pipings from flagging until they form roots, and the pipings strike more freely when full of moisture when they are taken off. The very reverse of this is the case with Auriculas, for these plants ought to be well on the dry side when the offsets are removed for propagating purposes.

The Pink likes a rich deep soil, and when well grown it is one of the most charming of garden flowers. I would not pit the Pink against the Carnation, there is room in every garden for both of them, and the fact that the Pink is in flower three or four weeks before the Carnation under the same conditions of culture is a very strong point in its favour. Several of the old florists preferred the Pink to the Carnation, probably because it was more easy of culture, and at that time the florist type of Carnation consisted of flakes and bizzars almost entirely; now that we have so many splendid border Carnations, selfs, fancies, yellow ground Picotees, &c., the Pink rather suffers in comparison.

In the early fifties, when I first started gardening, the Pink had been taken in hand by several fanciers, one of the most successful of whom was Dr. McLean, of Colchester. He first raised Criterion, and subsequently New Criterion and Great Criterion. Mr. Norman was also a great cultivator and raiser of seedlings; his best flower was Colchester Cardinal. There were scores of good varieties, which I greatly fear have gone out of cultivation. There is not so much variation in the Pink as in the Carnation, but it is only a matter of the flower being taken up by a few amateurs who will do their best to obtain distinct forms from seed. There are still in cultivation many good varieties of laced, and if seed is saved from these, cross-fertilised of course, there is considerable variation in the seedlings, and a considerable number have coloured grounds. I recently planted out 500 seedlings from seed of my own saving, and very interesting results were obtained. There were only forty single-flowered varieties, and one of them was so very pretty that I have propagated it. There were but ten varieties or 2 per cent. only good enough to propagate of the laced type; the others I did not care about, although there were several with coloured grounds which might have been grown

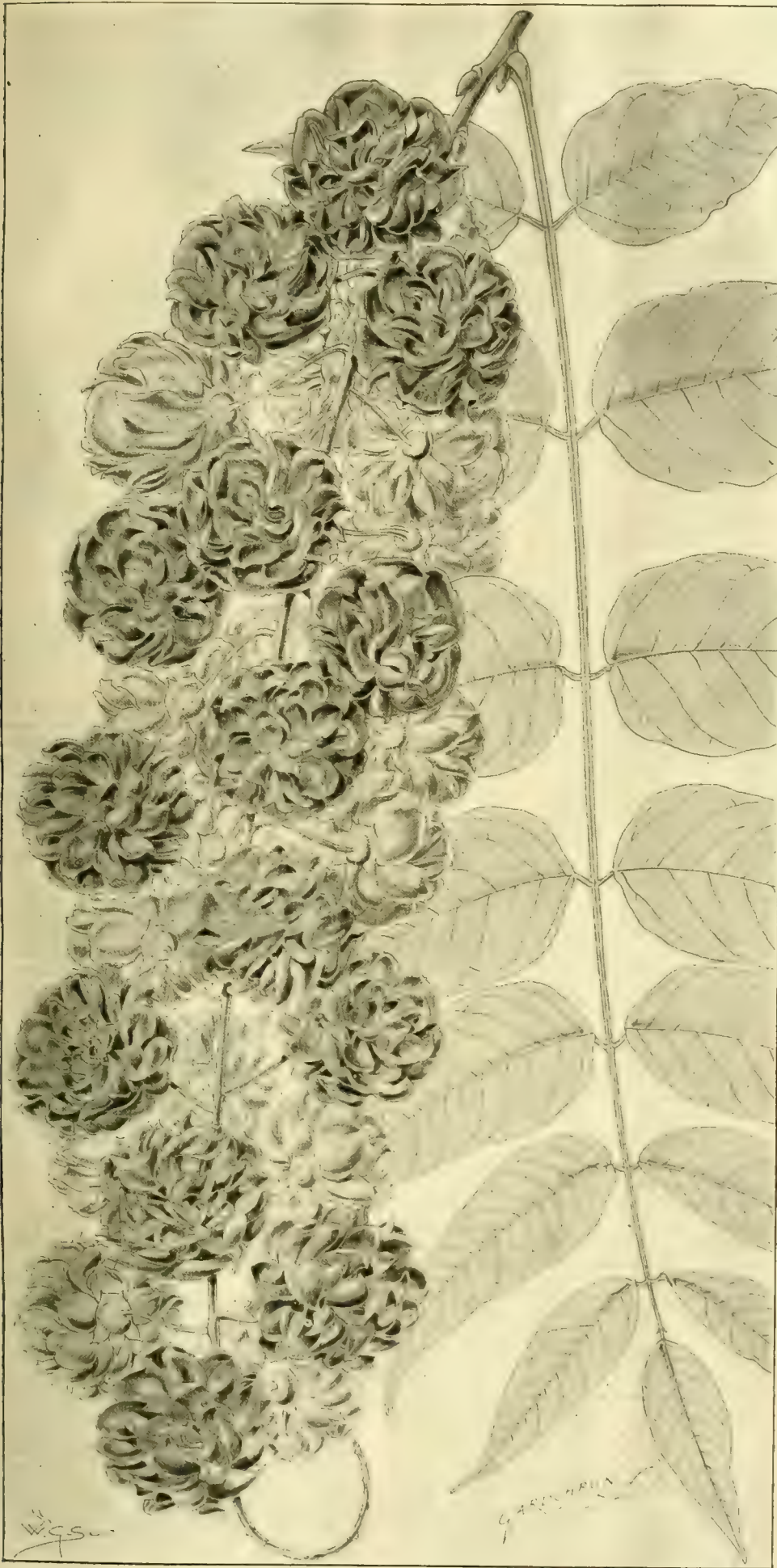


FIG. 151.—DOUBLE-FLOWERED WISTARIA.

again, therefore I possess ten double varieties of Pinks, and one single variety, out of 500 seedlings; on the other hand, there is a great deal of pleasurable excitement in watching the development of the flowers of seedlings, and the great charm of the culture of florist's flowers consists in anticipating the flowering of seedlings. A word or two on seed sowing, and seedling raising, may not be out of place here. The Pink, like the Carnation, has the style or stigmatic part of the flower in the centre, in the form of two horn-like processes; on the outer side of the curve is a close arrangement of short hairs. The anther is found amongst the petals attached to a slender filament. These are touched with a fine camel's-hair pencil, and the pollen thus removed from the anther is placed on the outer margin of the horns. The seed ripens about the end of August, and should be gathered, and left in the pods for a few weeks, and kept in a dry place. Sow it in March or April in a gentle bottom heat, and prick out the plants in boxes; to be planted out a foot asunder where they are to flower as soon as the plants are strong enough. By treating them in this manner, masses of bloom are to be obtained the following season, and any variety good enough should be propagated. If any distinct and pretty garden flowers are obtained outside the usual laced varieties, it would be well to secure some of them.

In one important point the Pink is superior to the Carnation, and that is in the matter of perfume; many Carnations sadly lack perfume, and these the more beautiful in other respects. Not so the Pink. I have never found one not sweetly scented; and the delicate perfume is, I think, more pleasant than that of the Carnation. *J. Douglas.*

DOUBLE WISTARIA.

WE are indebted to Mr. Anthony Waterer, of the Knap Hill Nursery, Woking, for specimens of the double-flowered, lilac-coloured Wistaria (fig. 151), a pretty variation from the single form; but if we had only one to choose from we should prefer the single form. It is curious to note the peculiar delicacy of tint that prevails in many Chinese plants. So much is this the case, that it is sometimes possible to recognise the country whence a plant comes by the tint of its flowers. New Zealand and Australian flowers may often be detected in this manner.

PLANT NOTES.

CLINTONIA ANDREWSIANA.

A LILIACEOUS plant, with broad leaves arranged in a rosette, and spikes of dark magenta-red flowers. This plant, which requires peat for its cultivation, is described in *Nicholson's Dictionary* as reaching 2 feet in height. The plants here, which were only imported last autumn from Mr. A. J. Johnson, of Astoria, Oregon, do not exceed 3 inches.

CALANDRINIA LEANA.

A dwarf alpine from the Washington "Rockies," thoroughly hardy, and producing several spikes of rather delicate light rose-magenta flowers, striped with darker rose. The colour approximates closely to that of *Geranium sanguineum* var. *roseum*. Can be increased by seed.

GENTIANA SIPHONANTHA.

A very fine *Gentiana*, producing several closely-packed spikes of flowers, whose blue is so fine as to be in the sunshine almost dazzling. Herr Max Leichtlin, however, tells me that *G. dahurica*, which has not yet flowered here, is even finer. If so it must be very good indeed.

CAMPANULA SULPHEURA.

This beautiful straw-yellow *Campanula*, which comes from the coast of Palestine, is described in *Post's Flora of Syria* as an annual. I only raised three plants, but these three, in a pot in the greenhouse, bloomed all through last summer, all through the winter, and continue to bloom still. They have never yet ripened a seed.

ADESMIA BORONIOIDES.

A semi-evergreen hardy shrub from the Patagonian Andes. It has very aromatic foliage, and produces many spikes of showy yellow flowers marked with red.

SISYRINCHIUM FILIFOLIUM.

The Pale Maiden of the Falkland Islands. A very delicate and charming plant which is, of course, perfectly hardy. The white flowers are about three-quarters the size of *S. grandiflorum album*, and are marked on the outside of each petal with three brown lines. It ripens seed freely.

These are among some more or less uncommon plants now in flower here. *A. K. Bulley, Ness, Neston, Cheshire.*

PALISOTA BARTERI.

The bright scarlet berries of this West African plant are very attractive, and compensate in some measure for the small pale purple flowers that are produced in the form of an erect, dense raceme on a short, solitary peduncle during the winter months. The plant has a very short stem, and the leaves, which are about 18 inches in length, are clustered together at the base, so as to form an imbricated sheath. The berries, which are at first white, gradually ripen to a bright scarlet tint, and are covered with a number of white, silky hairs. *J. G., Botanic Gardens, Liverpool.*

CULTURAL MEMORANDA.

THINNING CROPS.

THE thinning of seedling plants of all kinds is an important task, and one that should receive strict attention, especially when the land is dry as is the case at the present time. When the ground is moist, the work is the more readily carried out, and still better in showery weather, the plants left for a crop being uninjured by the removal of the surplus plants. Much harm is often done, in some instances almost leading to a failure, where crops have been allowed to remain unthinned till the plants have rooted deeply, and the thinning done in dry weather. Early thinning should be practised in preference, even in dry weather, to waiting for rain to come, and allowing them to get deeply rooted. In such case only a few rows should be thinned at a time, and these afforded water plentifully with a rose-water-pot, the holes left being filled in, and another application of water made so as to settle the soil about the plants that remain. In the case of Onions, I do not now thin the plants, with the exception of a root or two if large bulbs are required. Onions transplant readily, so that any vacant space can be made good with certainty of good results. Early Horn Carrots and other crops for drawing young need very little thinning, this being done by pulling out the largest each time roots are required for use. But those intended to stand for autumn and winter use should be allowed a fair amount of space. Parsley can be transplanted successfully, also Parsnips and Beet, and the roots turn out well, but the practice can only be recommended when the crop is likely to be somewhat short, and also for filling vacancies.

THE WEEK'S WORK.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bicton, East Budleigh, Devonshire.

Asparagus.—Now that Peas have become plentiful, the cutting of *Asparagus* should now be lessened, and cease altogether toward the end of the month. Let the beds or rows receive another dressing of artificial manure, stirring it in with the Dutch-hoe. On our light soil the beds are showing signs of suffering from drought, and no cutting has taken place since the 13th inst. It would greatly benefit beds planted this year, as well as all seedlings, if a thorough application of water could be made, and a mulch 3 or 4 inches thick put on the land afterwards. If the stems of *Asparagus* newly planted are falling over, afford them support by sticking some Pea-sticks among them, as any crippling of the stems due to breakage by wind injures the plants.

Broccoli, Brussels Sprouts, &c., should be planted regardless of the dryness of the soil, drawing drills with a mattock 4 or 5 inches deep, and saturating these with water as well as the seed-beds the previous day. In planting, make use of a trowel for such as have been pricked out in nurse-beds, and a dibber for those taken from seed-beds. Plant firmly, and water-in as the work proceeds. Veitch's Self-protecting Broccoli being one of the best early winter varieties, the number of plants put out should be commensurate with probable requirements. For this moderate-growing variety, 1½ ft. apart will suffice. The land which has borne early Peas is suitable for the later of these crops. The same remarks apply to the earliest-sown Sprouting Broccoli and Borecole.

Cabbage and Savoy.—The first-named, also the smaller-growing Savoy, if fit for planting, should be planted at from 1½ to 1½ ft. apart; while Drum-head Savoy and Couve Tronchuda should stand 2 feet apart each way.

Vegetable-Marrows.—Keep the bine pegged close down to the soil, so that the wind may not twist or bruise it. Vegetable-Marrows afford good crops without any pinching of the shoots, and if the bine is crowded, some of the lateral growths should be removed. See that the plants do not lack water, or the fruits will fail to swell.

Parsley.—A good breadth should now be sown for winter and early spring consumption in drills drawn an inch deep, and 12 inches apart, which have been well moistened. Plants that have afforded the winter and spring supply should now be destroyed, the leaves of the earlier sowings being now fit for use. Manure and dig ground for future cropping. The earliest-sown Coleworts may be set out on this land, planting them at 15 inches apart.

Turnips.—As only 0.64 of an inch of rain has fallen here during the past five weeks, up to the 14th inst., the earliest sowings have not been satisfactory, and the drought has been rendered severer by the almost cloudless skies and east winds. Water has been applied copiously twice a week, with but little success. Seed should be sown at intervals of a week or ten days while the weather remains dry, with the hope that showers may favour some of the sowings. Let the soil be well stirred between the plants.

Salads.—Sow at regular intervals of ten or fourteen days Radishes and Mustard-and-Cress, and keep the former constantly moist, or the roots will be stringy. Where small Onions are in request in salads, sow seeds in moistened drills drawn 1 inch deep.

Hoeing.—Keep the Dutch hoes going among Onions, Carrots, Parsnips, Lettuce, &c., whilst the work can be carried out with no detriment to the top-growth, and dust the Onion plants with soot occasionally when moist; it acts as a manure, and as a deterrent to the Onion-fly.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HUSSEY PACKE, Esq., Prestwold Hall, Loughborough.

Seeds.—The latest succession of *Primula sinensis* for the year may now be sown in pans in the manner advised for earlier sowings. This succession will be of great usefulness in greenhouse and conservatory decoration in the early spring months.

Humea elegans.—Sow in pans filled with a compost consisting of loam and leaf-mould, and place in a house or pit having a temperature of 60°. Having previously afforded water to the soil and allowed the surplus to drain away, scatter the seed evenly on a smooth surface, cover lightly with finely sifted mould, and shade the pans from the sun. The seeds germinate irregularly, and the gardener must have patience, and not throw the soil away when, perhaps, but a few plants have appeared. Should the soil get dry before the seeds germinate, dip the pans to the rims in a vessel of water, in preference to applying water in the usual manner.

Cinerarias.—The main sowing of the large-flowering varieties for flowering in early spring should be made towards the end of the present month. The pans or boxes used should be quite clean and be well drained, and then filled with sifted loam and leaf-mould, in the proportion of two of the first to one of the second; and to this should be added some coarse silver-sand. Having made the soil moderately firm and smooth, sow the seed,

and cover with finely-sifted soil mixed with sand; afford water by means of a fine rose water-can, and when drained, place the pans, &c., in a cold frame; shade from sunshine till the plants appear, then gradually inure them to the full light, and prick them off as soon as they can be conveniently handled. Seedling plants of *Cineraria polyantha* may be pricked off, and encouraged to make rapid growth. Place the plants in frames facing north, syringe them daily, and remove the lights at nights, and put them on the frames in the early morning, admitting air later.

Herbaceous Calceolarias.—From the present date and onwards up to the end of July, sowings of seeds of *Calceolaria herbacea* may be made; and the seeds being very minute, much care is required in sowing them. Prepare the seed-pans as for *Cinerarias*; make it firm, and on the top put a quarter-inch layer of very finely sifted leaf-mould, pressing it to an even, smooth surface. Afford the pans water, and leave them to drain for a couple of hours before sowing the seed. Sow it very thinly, and do not cover it with soil or sand, but cover with a sheet of glass, over which place paper or moss; then place the pans in a cold frame facing north. When the plants appear, remove the shading, and gradually inure them to air and light by tilting the sheet of glass. If a frame cannot be placed in a northern aspect, some temporary shading from the sun must be fixed up on the east, south, and west sides of the frame, which is better than laying shading directly above the seed-pans. If water be needed before the plants show, dip the pans to the rims, as advised for *Cinerarias*.

Hydrangea Hortensia may now be struck from cuttings of half-ripened wood, putting them in successively till August. The cuttings should be provided with a heel, and be inserted singly into small 60's or thumb-pots, and afforded water to settle the soil. Having done this, allow the soil to drain; then plunge in a frame having a bottom-heat of 80° to 85°, syringe daily, and shade them from the bright sunshine. The cutting-pots should be filled with loam, leaf-mould, and sand in about equal ratio. When rooted, pot off the cuttings in 48's, in turfy loam three-quarters, leaf-soil one-quarter, with a little decayed cow-manure and sand or sifted mortar-rubble, and place them in a cold frame, keeping the frame close for a few days, syring and shading them on sunny days. As the older plants pass out of flower, repot them into larger pots, afford generous treatment; and a position which will ensure perfect ripening of the growths.

Scented-leaved Pelargoniums.—The present is a suitable season for repotting large plants which may have been pruned back and re-started into growth. For such as these, pots of 9-inch diameter will be large enough, and smaller plants may be transferred to 7 and 8-inch ones. The compost best suited for these plants is one consisting of turfy loam, decayed manure, and leaf-mould, more loam being used than either of the other substances, and road-grit or sharp sand to give porosity. Place the plants in frames, and grow them on in these till required for indoors decoration. The following under their garden names are general favourites for covering walls and pillars and growing into specimens, viz., *citridorum crispum*, Fair Rosamond, Lady Plymouth, capitatum, tomentosum, and Rollisson's Unique.

THE FLOWER GARDEN.

By T. H. SLADE, Gardener to Lord POLTIMORE, Poltimore Park, Exeter.

Hemerocallis.—All of the Day Lilies are useful plants in the mixed border, and for planting near to, or on the banks of lakes, ponds, and streams, and generally in moist situations. At the time of writing, the two species in flower here, are *H. Dumortieri*, and *H. flava*, and as yellow is a colour not often met with in hardy perennials, Day Lilies afford variety of colour; and while the individual flowers seldom last more than a day, they are produced so freely that their short duration is scarcely noticeable. For cutting purposes the two varieties named are the best, and *flava* is expressly grown in quantity for this purpose. *H. Middendoriana* is another that I recommend for borders, as it forms smaller and neater clumps than the stronger growers. *H. fulva*, a strong growing plant, is the best to plant in the wilder parts of the pleasure grounds, holding its own among hardy Ferns, and other plants of stronger growth. It has copper-coloured flowers, which are produced freely

during the month of July. While the flowers of Day Lilies are useless for cutting purposes, they make a good display on the plant, and last several days. Other varieties are *H. disticha*, slightly different in colour; and a double-flowered variety, *angustifolia*, as its name implies, is a narrow-leaved variety. *H. Kwanso* fl.-pl. is suitable for growing along with *H. flava*, as also *H. minor* or *graminea*. There is also a desirable newer variety, with apricot-coloured flowers, named *H. aurantiaca* major. *Hemerocallis* are plants of easy culture, thriving in almost any kind of soil, and easily increased by division. They require but little attention when once established; but should any of them become thin in the centre after being planted three or four years, they should be lifted, the strongest pieces selected, and replanted. They thrive in shady places, and if the soil has some manure mixed with it at the time of planting, the stronger growing species will do well even when undisturbed for several years.

Pruning Shrubs after flowering.—At this season of the year, pressure of other work does not always allow the gardener to carry out this kind of work; still, if time can be spared, the pruning of flowering shrubs should have attention. Many summer and spring-flowering shrubs flower either on the current season's wood, or on the mature shoots of the previous, and note should be taken of this. If the flowers are produced on the young wood, such shoots after flowering should be removed, and the plant encouraged to make fresh, good long growths. *Kerria* (*Corchorus*) *japonica* is a beautiful shrub when in bloom, if pruned to produce shoots several feet in length, and these are furnished nearly the whole length with its golden rosettes of flower. The shoots of *Lilacs* and *Staphylea colchica* should be thinned after flowering, to allow of the strong, new wood becoming ripened. *Deutzia gracilis* and *D. scabra* should have the weaker and the older wood that has flowered removed, and new shoots encouraged to grow to a good length by applying mulches and manure-water. The *Snowball-tree* should have its weak wood removed, and the same holds good of *Calycanthus* and *Ribes*. *Rhododendrons* growing by the side of walks, and which have reached their limits, should have the longer shoots removed, and if this be done at this season, no flower-buds will be removed as would be the case if the work were left till the autumn or winter.

Recently-planted Evergreens.—At the time of writing, the weather is unfavourable for these, scorching sunshine and strong north-west winds prevailing. Much, however, may be done to accelerate the re-establishment of the plants by affording water to the foliage daily, and keeping the soil well moistened with a mulch of half decayed leaves or litter over the roots. If the water runs away too freely, place a strip of turf a little distance from the stem, to form a kind of basin for retaining the water.

Hollyhocks.—A sowing of seed may now be made in shallow drills or a warm border, affording water to the drills before sowing the seeds. It may be desirable in heavy land to cover the seed with sifted soil from the potting bench. Established plants pushing up their flower-spikes should be afforded water copiously, and occasionally manure-water.

Sweet Peas.—A sowing of these should be made for keeping up the supply.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. I. MEASURES, Esq., Cambridge Lodge, Flodden Road, Camberwell.

The East Indian-house.—The *Ærides*, of which *Æ. affine* is the type (synonymous with *Æ. multiflorum*), having recently passed out of flower, will be producing new roots and leaves. Our short summers are unsuited to the culture and flowering of *Ærides affine*, it being late in the year before growth begins, and it then becomes difficult even with every artificial aid to induce the plants to mature their growth before the autumn is upon us. It is therefore advisable at this date to place the plants where they can get plenty of sunlight, to afford abundance of moisture at the roots and in the air, and to take care that no check to growth occurs. The more robust growing sections of *Ærides* are not such difficult subjects to deal with, and their flower-spikes being now in course of development, the plants should be afforded plenty of water at the root, and very humid surroundings.

Saccolabium giganteum is another plant which needs encouragement at this season. The lovely little scarlet-flowered *S. curvifolium*, where it can be induced to grow satisfactorily, is one of the most desirable and attractive of the genus, and its erect racemes of flowers last for several weeks in perfection. I have previously advised, owing to its miniature structure, that it should be grown in baskets, and suspended from the rafters. There its cultivation presents no difficulty, providing a suitable position be found for it; even a position in the same house, only a few feet removed from another, frequently brings about the desired effect. *S. ampullaceum* is another species in flower with us at the present time. Its rose-tinted flowers form a striking contrast to those of *S. curvifolium*, and they are equally admired. Its densely-clustered racemes are produced in such a manner that they hide the stems and bases of the leaves. *S. bellinum*, a pretty dwarf species, is not so extensively cultivated as was once the case, or as its merits deserve that it should be. I find that it succeeds in baskets or shallow pans hung from the roof, and that it should be removed from the East Indian-house to the warm intermediate-house during the winter. In this house more atmospheric moisture is afforded the plants generally than in the East Indian-house; and the leaves of *S. bellinum* being of a very sappy nature, the plant requires more moisture than it finds in the East Indian-house.

Vandas.—Such of these as are now passing out of flower should not be afforded much direct sunlight, although sun-heat should be utilised to the utmost by closing the ventilators of the house sufficiently early as to obtain a considerable rise. Here, the ventilators are closed at about 2 P.M., the floors thoroughly damped, the syringe plied between the pots, and every means taken to saturate the air with humidity; the use of artificial heat is thereby much lessened. The insects which infest *Vandas* are a small brown scale, thrips, and red-spider; the first is difficult to dislodge, and needs to be scraped off with a soft-pointed stick, and the plants then carefully sponged with soapy water. Some growers find methylated spirit useful for removing scale, but it needs great care in the using, and the work to be entrusted to careful men. The second and third are always troublesome if the house is a dry one, but vaporisation with Richards XL-All at regular intervals and sponging the leaves afterwards will keep these pests in check. Care should be taken at the present season, especially after storms, to ascertain that the temperature of the water used in the various houses is about that of the normal temperature of the houses, otherwise much harm will be done to the more tender plants.

FRUITS UNDER GLASS.

By MATCOLM MCINTYRE, Gardener to Sir CHAS. TENNANT, The Glen, Innerleithen, Peeblesshire.

Peaches and Nectarines.—After the fruits have been gathered from early-forced trees, the houses should be ventilated to the fullest extent, and if possible the roof-lights should be removed by the early part of July, the gardener being guided in this matter by the degree of maturity of the wood; if mature, remove the lights earlier, if not, let them remain a little longer. When the roof-lights are not portable, in addition to the fullest ventilation possible being given, the border should be frequently damped, and only afforded water so that premature ripening of the young wood and leaves be not induced. Keep the latter free from red-spider by syringing heavily occasionally, and if necessary, by the application of an insecticide, it being of the utmost importance that the foliage be kept clean and healthy, and ripened naturally. Laterals may be encouraged where the space allowed for the trees is not filled up by the young shoots, but avoid overcrowding. All shoots that have carried fruits, and are no longer required, should be removed, so as to admit light and air freely to the new growths; and if there is too much crowding of the shoots intended to fruit next year, thin them well.

Pot-trees from which the fruit is cleared may be plunged in or set upon coal-ashes out-of-doors. Do not expose them to the full rays of the sun at first, as too much sunshine may cause them to drop their leaves prematurely. Cover the pots with a thick mulch of stable-litter or leaves. Afford water copiously whenever the soil is found to be getting dry, and syringe the heads morning and evening.

The Second Early House.—Gentle fire-heat is necessary during cold nights and on dull days, to insure steady progress, with the air constantly admitted so as to insure good flavour. It is also necessary to assist the fruits of late varieties in swelling and finishing by affording a moderate amount of humidity, and to keep the border in a moderately moist state, not allowing it to become cracked on the surface. To keep the roots near the surface and active, apply a mulch of rather littery material. If the weather be very bright, lay some netting over the roof, which will be advantageous alike to foliage and fruit. Do not neglect the daily syringing of the trees in sunny weather, doing it early in the afternoon, so that the fruits and foliage may become dry before nightfall, using only clear water, as dirt cannot be removed from the skin of ripe fruit.

Young Trees.—These will have been disbudded, and the shoots regulated, so that the principal ones will be 12 to 15 inches apart, and those for next year's fruiting coming from the previous year's shoots should be disposed at about 15 inches asunder, stopping them if necessary when 15 inches of growth have been made; and the laterals to one joint as produced. The extension or main shoots should be trained-in at full length, provided they are evenly balanced. If any shoots become stronger than others, elevate the weak and depress the stronger ones, so as to induce equal vigour throughout the entire tree. Shoots which may be considered to be too strong may be stopped or cut out, as trees which make very gross wood when young seldom turn out healthy; and it is better to remove entirely the excessively strong wood, and encourage the short-jointed and sturdy wood, avoiding a close vitiated atmosphere; ventilate early in the day, and increase the amount of air with the advancing temperature. It is essential to train the growths sufficiently thin to allow the sun and air to have free access to them, and to keep the foliage clean and healthy, so that the buds may be duly supplied with nutriment.

THE HARDY FRUIT GARDEN.

By C. HERRIN.

Cherries.—The early varieties of sweet Cherries will now be ripening the fruit fast, and the trees should be covered with netting in gardens where birds abound, especially the starling, as a few of these birds will soon clear off a crop of Cherries. When the netting has to be hung from the top of a wall, some forked twigs should be used to keep it at a safe distance from the wall, or the birds will be enabled to reach the fruit through the meshes; and at the base of the wall the net should be pegged down at from 3 to 4 feet from the wall, to enable the gatherer to pass about freely underneath, and the top and ends should be carefully secured. The black variety, *Bigarreau de Schrecken*, is one of the finest early Cherries grown, and is now almost ripe in south country gardens. If the black aphid infest the shoots and leaves, some strong *Quassia* water should be made, and the shoots dipped into it, as wetting the fruits by a general syringing with this bitter insecticide cannot be carried out. The *Quassia* water hanging on the points of the dipped shoots should be shaken into a vessel containing the wash, so as to prevent any of it falling on to the fruits. The points of such shoots as are not required for laying-in should be removed, and traced forthwith into a basket and burnt. Trees of later varieties should be afforded a copious supply of water at the roots while the fruits are swelling, more especially if the present dry weather continue.

Fruit Bushes and Caterpillars of the Winter-moth.—The caterpillar of this moth, although not so prevalent as in some past seasons, are in evidence in some gardens and orchards, and wayside trees of Lime and Oak are, I notice, also suffering from their ravages, and with the continued dry weather the destruction of the foliage will continue. In gardens where bushes and low standard trees exist near to or among the vegetable quarters, spraying with arsenical compounds, as *London Purple*, cannot be used; and the trees must perforce be examined, and all curled-up leaves pinched between the finger and thumb so as to kill the caterpillar curled up therein. Shoots that are not required, and which may be infested, should have the points removed and burnt. Washings with *Quassia* mixture, or clear water, forcibly applied by means of the wall-engine or hose, will be of much assistance.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

APPOINTMENTS FOR THE ENSUING WEEK.

WEDNESDAY, JUNE 26. { National Rose Society's Show, in connection with the Richmond (Surrey) Horticultural Society.

THURSDAY, JUNE 27. { Colchester Rose and Horticultural Society's Show.
Société Nationale d'Horticulture de France (Orchid Show).

SATURDAY, JUNE 29. { Windsor and Eton Rose Show, in Eton College Grounds.

SALE.

WEDNESDAY, JUNE 26.—Collection of 130 Japanese Dwarf Trees, Palm Seeds, Bay, Palms, &c., at Stevens's Rooms, 38, King Street, Covent Garden.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years, at Chiswick—62° 2'.

ACTUAL TEMPERATURES:—

LONDON.—June 19 (6 P.M.): Max. 68°; Min. 47°.

June 20.—Dull, rainy; cool.

PROVINCES.—June 19 (6 P.M.): Max., 59°, home counties; Min., 51°, N. E. Scotland.

A SCOTTISH correspondent, well versed in horticulture, sends us the following remarks on the subject of manures for Asparagus:—

"I have just had sent me through the post a circular by a firm of chemical manure manufacturers, in which is given a résumé of Asparagus culture. As some of the instructions contained therein appear to me misleading, and as these circulars will fall into the hands of numerous gardeners, I wish to point out where mistakes may be made if these instructions are carried out. The writer first refers to the prevailing apathy as to the cultivation of this excellent vegetable, and remarks on the inferiority of imported produce as compared with that which could be grown in Great Britain. We agree in this, that the green home-grown heads are superior to the long blanched ones imported early in the season, at which time the foreigner will always have the advantage of us. Then the reasons are given why its cultivation is so limited, and this is due to the absurd directions stated in books which are regarded as antiquated, and the methods employed expensive, elaborated, and enshrouded in mystery. The writer thereafter proceeds to describe the proper method by which Asparagus may be successfully cultivated. Planting 4 feet apart each way on hillocks, like an inverted basin, is recommended, and no matter whether the soil be stiff marl or very sandy, a good guano, if administered two or three times during the year, will do all that is required.

Reference is also made to the removal of soil from the crowns, and to covering them with spent manure in autumn, while seed is recommended to be sown annually for the purpose of forming fresh plantations. Surely labour must be

plentiful, and the extent of ground almost unlimited, where such a recommendation could be given effect to. Cutting the produce is also condemned, and a method of twisting the shoot from the crown substituted. This must be a slow process compared with cutting at the surface of the soil; and besides the base of the shoot is extremely tough and useless, while the juice it contains may possibly be of some service to the root when left on the crown.

In many soils it is impossible to grow Asparagus even with the application of manure. To plant on a sandy soil, especially on hillocks, would be too dry for Asparagus; while a clay soil is too retentive of moisture. The most suitable soil and conditions generally are found to be a sandy loam, 2 feet deep, resting on gravel or sand, forming a natural drainage. Where soil like this is not at command, measures must be taken for the preparation of the bed on which a plantation is to be made, by adding strong turfy loam to a sandy soil, and sand to one of an adhesive nature. It is only in a low, damp situation, with a cold subsoil, that a layer of broken stones is required, and where the beds should be raised above the common level. The importance of the crop, however, and the durability of the plants justifies any trouble and expense in preparing for its cultivation. When I undertook the management here 28 years ago, I found the Asparagus-beds poor indeed, the plants thin, and the produce small. The beds were considered to be at least 50 years old, and apparently past renovation. I resolved to make a new plantation, which was done the following spring. Meanwhile I had to do what I could with the old beds in maintaining a supply for the table till the young beds were ready for cutting from. With this in view, the old beds received a good dressing of well-made manurial compost in early winter, most of it being drawn into the alleys in spring, the rest lightly forked into the surface of the beds. About the middle of the month of March the beds were afforded a dressing of salt, which was carried down to the roots with some diluted drainings of the cow-shed, followed with a slight dressing of fish-manure, guano, and nitrate of soda alternately three times during the summer. By the time the young beds were ready to cut from, the old ones had improved so much by the liberal treatment afforded that I regretted the trenching of them down, as they might have remained productive to this day. I mention these facts to show that with suitable soil and liberal treatment, Asparagus plants will show good produce for a great number of years. The practice carried out here in the production of heads ranging about 2 inches in circumference, which are better appreciated than thicker stems, is as follows:—The soil being a medium loam, well drained, no special preparation was necessary to begin with, further than trenching it 2 feet deep in the autumn, at which time a fair quantity of good partially-decomposed farmyard manure was incorporated with the soil.

The soil was given a fine tilth in March, and beds 4 feet wide were formed, so as to allow of three rows of plants being planted in each, the rows being 1 foot 3 inches apart, leaving 6 inches between the outer rows and the alley. About the middle of April, when the crowns of the two-year-old seedlings were starting to grow, the plants were lifted from the seed-bed with all their roots intact, and spread in wide shallow furrows drawn out at the distance apart mentioned. The crowns were covered with sifted refuse soil from the potting-bench, and finally the staple soil was spread about, and the surface made level and smooth. No cutting was permitted the first year, and very little the second, but a small quantity of nitrate of soda and guano was sprinkled over the beds in moist weather, and the stems were supported to prevent breakage by wind while they were thin on the ground. The beds referred to are now 28 years old, from which is obtained excellent produce annually by the treatment previously mentioned. Many growers give a heavy dressing of sea-weed, and nothing else."

A REMARKABLE FIND.—The other day, Mr. L. Neade, of the Sunnyside Nurseries, Clevedon, whilst at work in his garden, found a rare coin, in the shape of a Bristol farthing, which is in a remarkably good state of preservation. On one side is inscribed "Farthing, A. Bristol C.B. 1652," and on the reverse side, "Armes of Bristol." It is supposed that the coin was minted in 1652, as stated, but it has not yet been examined by an expert.

HORTICULTURAL CLUB.—The annual excursion of the members of the Horticultural Club is fixed for July 17 next, when it is proposed to visit Mr. GEORGE PAUL's Rose nurseries at Cheshunt, Mr. THOMAS ROCHEFORD's nurseries at Broxbourne, to drive through the Wormley and Broxbourne woods to Panshanger, the seat of Earl COWPER, and dine in the evening at Hertford. Further information will be announced as soon as possible. *H. Honeywood Dombrain, Hon. Sec., June 15, 1901.*

—A portrait of the Rev. H. H. D'OMBRAIN, founder and Secretary of the Club, has been placed in the Club Room at the Windsor Hotel, Victoria Street.

THE LIVERPOOL HORTICULTURAL SOCIETY will hold its twenty-second annual Chrysanthemum show on November 13 and 14 next, in the St. George's Hall. A schedule of prizes that will be offered on that occasion for exhibits of Chrysanthemums, fruits, &c., is sent us by the Secretary, Mr. H. SADLER, 7, Victoria Street, Liverpool.

THE NATIONAL CHRYSANTHEMUM SOCIETY'S ANNUAL PICNIC to Downside, Leatherhead, the residence of ALFRED TATE, Esq., has been fixed for Monday, July 8, in order to see the Rose-garden at its best; and the cost, inclusive of railway fare, conveyance to and from Downside, with use of the conveyances during the day, dinner and tea, will be 9s. 6d. Ladies are specially invited. The company will be conveyed to Leatherhead station by the London, Brighton & South Coast Railway, from Victoria, London Bridge, and Addison Road. Details of the programme, together with prices of tickets, &c., may be obtained of Mr. R. DEAN, Ranelagh Road, Ealing.

PRESENTATION.—Mr. JOHN MACHAR, gardener at "Corona," Broughty Ferry, Forfarshire, on the occasion of his leaving to take up the duties of land steward and overseer on the Kilmanahan Castle and Knocklofty estates of the Earl of DONOUGHMORE, Ireland, was made the recipient on Wednesday, June 12, of an aneroid barometer, and Mrs. MACHAR the recipient of a piece of silver plate from the young gardeners and a few friends at "Corona." Mr. MACHAR had made a name for himself among the horticultural fraternity of the locality.

THE NOTTINGHAMSHIRE HORTICULTURAL AND BOTANICAL SOCIETY'S summer exhibition is to take place in the grounds of the Arboretum, Nottingham, on July 24 and 25 next. There are classes for plants, flowers, fruits, and vegetables, and liberal prizes are offered for groups of miscellaneous plants arranged for effect. Schedules may be had of Mr. C. J. MEE, 29, Long Row, Nottingham.

A VISIT TO CARDIFF CASTLE has been arranged by the Devon and Exeter Gardeners Association for July 17. The party will proceed by train to Weston-super-Mare, and from thence by steamer. In addition to Cardiff Castle and its gardens, the party is invited to visit the annual show of the Cardiff and County Horticultural Society, which will be opened in the Sophia Gardens on that day, where there will be demonstrations of the process of fruit-drying by suitable apparatus. The Exeter folk are sure to enjoy the trip; but Cardiff possesses so many features of interest, including the vineyards at Castle Coch and Swanbridge, and the public parks, that it will not be possible to see all these, and to return to Exeter the same evening.



FIG. 152.—IRIS EWBANKIANA, A NEW IRIS. (SEE P. 397.)

THE LATE PARIS SHOW.—As we have already chronicled, a heavy fall of rain deluged the tents in that part of the Tuileries Garden in which the recent show was held, and which was converted into a vast lake. The consternation of the visitors and exhibitors may be imagined, but for those whose powers of imagination are not equal to the task, *Le Jardin* gives some humorous illustrations of the scenes that occurred. The sketches show the state of affairs in an admirable manner, and as artistic productions are excellent. Fortunately, the storm lasted not much more than an hour, and the next day the traces of the mischief were comparatively slight.

AGAPANTHUS CAULESCENS.—In the *Garten Flora* for June 1 is a coloured illustration and a description of an *Agapanthus*, in which the stock, instead of remaining contracted, is raised into a leafy stem, with two rows of linear, oblong leaves, and terminated by an umbel of deep blue flowers. The plant is a native of the Transvaal, and is described by Mr. SPRENGER.

SAMBUCUS RACEMOSUS PLUMOSUS.—Messrs. CLIBRAN & SON, Altrincham, kindly send us shoots of the golden-leaved variety of *Sambucus racemosus plumosus*, to show the decorative value at the present date. They tell us that the plants are pictures of beauty, and their beautiful lacinated, deep golden foliage is extremely attractive. It is perfectly hardy, and retains its beautiful colours late into the autumn. As a bush for planting on a lawn or in an ornamental shrubbery, where it can show up against a dark background, it is unique, and is certainly worthy the attention of all intending planters of trees and shrubs.

THE WEATHER IN ABERDEENSHIRE.—During the week ending Saturday, 15th inst., unusually cold weather has been experienced in the north. We have had an extraordinary contrast to last week's extremely hot weather. Showers of rain, sleet, and snow have fallen, and on Tuesday morning the unusual June spectacle was witnessed of the hills covered from summit to base with a mantle of white. Considerable damage has been done by the hail to fruit-trees and bushes, much of the fruit being shed in exposed places, and indeed generally, unless where well sheltered. Were fine, warm weather vouchsafed us now the copious rains that have fallen during the week will do a world of good to all vegetation.

PÆONIES.—Messrs. KELWAY have favoured us with a sample of their superb *Pæonies*. These are fine in form, solid in substance, rich and varied in colouring, and some of them delicious as to perfume. Nobody who has space and can command a sufficiency of manure should be without a selection of these magnificent hardy perennials. The semi-double flowers (none are truly single) have numerous spreading petals surrounding a cluster of yellow stamens, which in their turn encircle the five carpels with their rose-coloured stigmas, and a short cup-shaped disc at the base.

The double flowers have an infinitude of petals replacing the stamens; in some cases these petals are loose and spreading, in others densely compacted, and the petals incurved as in an incurved *Chrysanthemum* or double *Hollyhock*. There are some persons who object to double flowers, and these have our full sympathy; but in these double *Pæonies* there is an absence of the formality dear to the rigid florist, and in its place a lovely play of light and shade, resulting from the exquisite curves of the petals responding to the "environment," and proving the plant to be alive, and not a mere cardboard model from which the life has been squeezed out. Among the specimens sent to us are:—

Limosel.—A large double flower with pink petals, edged with white, the central petals narrower than the outer guard-petals.

Blanche Fitzmaurice is a double flower, with pale sulphur flowers flushed with pink, the central petals narrower.

Lilla Mayo.—A large double flower, white with a slight rosy flush.

Christine Shand.—Flowers large, globular, very double, inner petals narrower, densely packed like those of a double *Hollyhock*, white flushed with rose.

Miss Salway.—A large, well-formed, double flower, white tinged with lemon, inner petals fringed. One of the best.

Dolabra.—A *Hollyhock*-like flower, with outer petals rose-pink, the central ones very numerous, narrow.

Barrymoor.—A very double flower, with deep rose-red petals.

Portia is a good double, white.

Lady Romilly.—A very double flower, with pale pink petals, the inner ones densely compacted.

Lady Alexandra Macduff.—Very double, very pale pink.

Among the so-called single and semi-double flowers are:—

Doris.—Semi-double, with rose coloured petals, which contrast well with the yellow anthers.

Sir Comer Petheram.—Deep red petals, encircling a tuft of yellow stamens.

Agnes Mary Kelway.—In this flower the outer-most guard-petals are mostly pale rose coloured, the narrow intermediate ones replacing the stamens are narrow, sulphur-yellow, these encircle a row of central rose coloured petals. The flowers thus appear to be profused, a second flower being formed within and above the primary flower.

Countess Cadogan.—A semi-double flower, with pale rose-pink petals encircling the yellow stamens.

Sir Angus Holden.—A very large semi-double flower, with deep rose coloured petals.

MEETINGS OF THE GHENT AGRICULTURAL AND BOTANICAL SOCIETY.—At a recent meeting of the *Chambre Syndicale des Horticulteurs Belges et Société Royale d'Agriculture et de Botanique* of Ghent, the following awards were made:—Certificates of Merit for *Clivia miniata* fol. var., to M. L. DE SMET-DUVIVIER; for cut flowers of *Cattleya intermedia* Vinckeana, and for C. Mendeli var., Comtesse DE KERCHOVE (à l'unanimité); for C. dubia grandiflora, for C. Mendeli "Bella" (par acclamation), and also for *Lycaste Skinneri* var., all these plants from M. G. VINCKE DUJARDIN, Bruges; similar awards were also allotted for *Odontoglossum Beauté de Royghem*, from M. VAN WASSENHOVE; for *Cymbidium eburneo* × *Lowi*, from M. L. DE SMET-DUVIVIER; *Cypripedium nobile* Spicerianum × *Leeanum superbum* (à l'unanimité), from the last-named exhibitor; and for a Liliaceous plant imported from Madagascar in 1898, and sent by MM. VERDONCK. Certificates for Cultivation and Flowering were awarded for *Dendrobium speciosum*, from MM. VERDONCK (par acclamation et avec félicitations du Jury); for *Polygala Dalmatisana*, from the Société Anonyme "l'Extension Horticole;" for *Erica cucullata*, from M. G. DE SAEGHER; and for *Azalea dianthiflora* M. Jacquet, from the Société "Extension Horticole." Honourable mention was allotted for a new *Spirea* (*Astilbe*), from MM. ST. V. WAVEREN ET KRUYFF, of Sassenheim, Haarlem, Holland. At the last meeting of the Société, the following awards were made:—Certificates of Merit for *Cattleya intermedia* alba, C. Mossiæ var., a cut flower of C. Mendeli "Souvenir de la Reine" (par acclamation et avec félicitations du Jury), C. Mossiæ Vinckeana (also par acclamation), a cut spike of C. Mendeli "Empress Queen" (also par acclamation), for C. Mossiæ aurea, and for C. M. Reineckiana; all these plants sent by M. G. VINCKE DUJARDIN, of Bruges. Certificates of Merit were also allotted to M. L. DE SMET-DUVIVIER for *Lælia grandis tenebrosa* excellens, and for L. grandis tenebrosa gloriosa; to MM. VERDONCK, for *Odontoglossum Hunnewellianum*; to M. LOUIS DE SMET (par acclamation), for *Anthurium Rotbchildianum* "Mme. Emile Steyaert," for *Anthurium R. Cyrano* de

Bergerac, A. R. Quo Vadis, and for A. R. Mde. Louis de Smet; to M. le Marquis DE WAVEREN (par acclamation et avec félicitations du Jury), for *Cattleya Mossiæ* var. Sir Thomas Lipton, for *Lælia grandis tenebrosa*, *Cattleya Mossiæ* var. Reineckiana sub-var. superba (par acclamation), for C. Mossiæ var. Vieil Or (also par acclamation), C. M. The Giant, *Dendrobium atro-violaceum*, *Lælia grandis tenebrosa*, L. purpurata Ronseleana, *Cattleya labiata* Warneri, C. Mossiæ Mde. Lucien Linden, C. Mendeli Prince Edward, C. Mossiæ var. Perfect (à l'unanimité), and for C. Mendeli Ronseleana. Similar awards were granted to MM. VERDONCK for *Epidendrum* (Guatemala); la Société Anonyme Horticole "La Lys," of Deynze, for *Odontoglossum Alexandræ* var., for specimens of *Cattleya Mossiæ*, and for *Odontoglossum Alexandræ*; also to M. CH. GAZELLE, for *Azalea Illex*; to Messrs. HUGH LOW & Co., of Bush Hill Park, for a collection of *Schizanthus Wisetonensis* (par acclamation et avec félicitations du Jury); and to MM. VERDONCK, for six *Cattleya Mendeli*. A Certificate for flowering was awarded for a collection of *Azalea glauca stricta* from M. L. DE SMET-DUVIVIER; and Botanical Certificates were allotted to MM. VERDONCK for *Oncidium* (Brazil), and to M. VAN DRIESCHKE LEYS for *Cestrum Parqui*. The Jury expressed the hope of seeing at a subsequent meeting *Cattleya Mossiæ* Wilhelmina, from M. G. VINCKE DUJARDIN; *Odontoglossum crispum* Stella, from M. E. PRAET; and, on the plant, a raceme of the *Cattleya Mossiæ* var., sent by the Société "La Lys," of Deynze.

NEW LILIES.—Mr. J. G. BAKER has drawn up for the Lily Conference of the Royal Horticultural Society, to be held at Chiswick next month, an account of the new Lilies which have been discovered since the publication of ELWES' *Monograph* in 1880. They run to upwards of thirty-five distinct species or well-marked varieties, mainly from Central and Western China, Upper Burma, and North Western America. A good many of them have not yet been introduced into cultivation.

READING COLLEGE REPORT.—We have received from Reading College a Report by Mr. DOUGLAS GILCHRIST, Director of the Agricultural Department, on Trials of Seeds, Mixtures for Hay and Pasture. The experiments were made at the Duke of Wellington's Home Farm, Strathfieldsaye, Hampshire; on Mr. ALFRED PALMER's land at East Thorpe, Reading, Berkshire; and on Plantation Farm, Wolverhampton; as well as at Kidmore Grange, Caversham, Oxford; Shillingstone, near Blandford, Dorset; Sherborne, Dorset; and Stratton, Hampshire. Such work in divers districts cannot but have a beneficial effect on agricultural industry.

CORYPHA AUSTRALIS: A CORRECTION.—It is pointed out to us that the Palm represented in our last supplementary illustration is the *Chusan Palm*, *Trachycarpus excelsus*, syn. *Chamerops Fortunei*. We think our critics are right, and that it is a mistake to suppose that *Corypha australis* would be hardy in Cornwall. We had not seen the Palm figured, and are sorry to have been misled in the matter.

THE CULTURE OF FLOWERS IN THE WISBECH DISTRICT.—An article in a Wisbech paper for May 8 contains a long account of the cultivation of flowers in this district. Upwards of 6,000 acres are devoted to the culture of flowers and fruit, but it is a question whether, for the present, the culture of flowers has not outrun the demand. Mr. J. W. CROSS has some 12 or 13 acres devoted to the culture of *Narcissus* bulbs of various kinds; and Messrs. R. H. BATH, Limited, are also large growers in the same neighbourhood. As many as 600,000 blooms of *Narcissus poeticus ornatus* are represented as having been plucked for market in one day—a prodigious quantity truly! This and the old double *Daffodil* (*Telamonius plenus*?) are said to be the most popular varieties. N. Horsfieldi, princeps, grande, Sir Watkin, Sampson, and many other varieties are largely grown. Of King



FIG. 153.—INFLORESCENCE OF *PHYLLOSTACHYS HENONIS*.
(SEE P. 410.)

Edward, VII., which is of more vigorous growth than *poeticus ornatus*, only about 1,000 bulbs at present are known to exist, but it is in course of

propagation, and will soon be put on the market. Tulips and other flowers are also grown on a large scale. All this is interesting and satisfactory from

a cultural point of view. Not so the story (if it be true) that fourteen or fifteen labourers are despatched into Wales yearly to dig up bulbs of the common Daffodil "in their wild state." In this way it is stated that last year no fewer than 13 tons of bulbs of "Lent Lilies" were dug up. If this be true, as we sincerely hope it is not, it is time a little moral pressure was brought to bear upon the landowner who can tolerate such wholesale destruction. There is surely a higher law than that which says, "Shall I not do as I will with mine own?" Moreover, if he chose to cultivate them for the purpose no one could grudge him any profit he could obtain. As it is, he must be classified with those who violate the cliffs of Dover and Folkestone with huge advertisements of "Quaker Oats," or disfigure our lovely landscape with "little liver pills," and other abominations. The only thing for right-minded people to do is to consider these cruel abominations as weeds, or as something out of place, and to treat them accordingly.

"HOLIDAYS IN EASTERN COUNTIES," edited by PERCY LINDLEY (London: 30, Fleet Street, E.C. New York: 362, Broadway). The pictures in this book are so delightful that they rather distract attention from the letterpress. There are lovely little views of sea and country, some of them after CROME, CONSTABLE, and other favourite artists; and picturesque "bits" of such beauties as Ely, Peterborough, and Norwich, all within reach of the visitor to the eastern counties. A scheme, including the Harwich route to the Continent, is appended, the whole booklet being well adapted to tempt the traveller into the paths recommended to him. The illustrations are supplemented with "suggestive hints, information of practical value to intending tourists and visitors, and essential facts for golfers, anglers and others; lists are given of the hotels, boarding-houses, and house agents at east coast watering-places, and of the hotels and inns, and names of persons who have yachts or boats for hire in the Norfolk Broads district." A sketch map and an index are included.

GREENWICH PARK.—Mr. A. D. WEBSTER has communicated to the Blackheath Naturalists' Society an interesting paper on the "Flora and Fauna" of the park committed to his charge. No fewer than 175 species of plants, and 74 of birds, have been detected within the precincts of the park. Some of the plants are likely to have been introduced by the birds, and some like *Silene Armeria*, once cultivated, have established themselves in plenty. The green woodpecker and the kingfisher may still be seen in the confines of the park, and we are sure that Mr. WEBSTER will do all that in him lies to protect both natives and visitants of the fine old park beloved of Londoners.

PUBLICATIONS RECEIVED.—Field Studies in Natural History.—*Programme of Summer Rambles*, 1901. Essex County Council.—*Cassell's Dictionary of Gardening*. An illustrated encyclopædia of practical horticulture for all classes. Edited by Walter P. Wright. Part I.—*The Birds of Yorkshire*. Commenced by Wm. Eagle Clarke, and continued by Thomas H. Nelson. Contents of fourth instalment:—Rock Thrush, Hedge Accentor, Alpine Accentor, Redbreast, Nightingale, White-spotted Bluethroat, Red-spotted Bluethroat.—*Agricultural Gazette of New South Wales*, March. This contains notes on Wheat pests; Flax-growing for Linseed; Injurious effects of certain Grass-seeds to live-stock; Cabbages for Dairy Cattle and similar subjects.—*Annual Report of the Secretary for Agriculture, Nova Scotia*, for 1900. Some of the most important experiments have been made in Cranberry culture, which, in "King's County continues to be profitable. The large yield on some bogs of about eighty barrels per acre gathered from our hitherto waste bog-lands is a source of wealth unknown a few years ago." *Botanic Station, Grenada, Annual Report*, 1899. By W. E. Broadway, Curator. A record of satisfactory progress.—*Boletín del Instituto Físico-Geográfico de Costa Rica*. No. 3, March 31.—*Welwitsch's African Plants*. The catalogue of the

African plants collected by Dr. Friedrich Welwitsch in 1853 to 1861, and published under the auspices of the Trustees of the British Museum, is completed with the publication of the second part of the second volume devoted to Cryptogamia. The contents of this volume are arranged as follows:—Vascular Cryptogams, by William Carruthers, F.R.S.; Mosses, by Antony Gepp; Hepatics, by F. Stephani; Marine Algae, by Ethel S. Barton; Freshwater Algae, by W. West and G. S. West; Diatomaceae, by Thomas Comber; Lichenes, by E. A. Wainio; Fungi, by Annie L. Smith; and Mycetozoa, by Arthur Lister, F.R.S. The general index is also appended.—From the Council of Agricultural Education, Victoria: *Report by the Principal (C. Bague Luffmann) of the School of Horticulture for the year ending December 31, 1899*. A feature of the year was the opening of the school to women students, who were very successful. The result of the year's work is extremely encouraging.—*Bulletin of the Botanical Department, Jamaica*. Edited by William Fawcett. May, 1901. Contents: Washed Soils: How to Prevent and Reclaim them; Oil of Akee.—*The Caxtonian Quarterly*, a Journal devoted to the interests of Printers, Lithographers, Bookbinders, Paper Makers, &c.—*The Orchid Review*, June.—*Nature Notes*, June.—*Annual Report on the Botanic Gardens, Straits Settlements, for 1900*, by H. N. Ridley, contains mention of useful experiments with Para Rubber, and other notes.—*Agricultural Journal, Cape of Good Hope*, May. Devoted to agriculture, stock-farming, entomology, horticulture, &c.—*Annalen des K. K. Naturhistorischen Hofmuseums*, Wien. Band XIII., No. 2, 3, 4; Band XIV., 1–4; Band XV., No. 2.—*Wiener Illustrirte Garten Zeitung*, May.—*Le Chrysanthème*, May–June.—*Bulletin de l'Association pour la Protection des Plantes*, No. 19. Contains reports and notes on Forêts et Reboisements, Fleurs d'Été, Société Allemande pour la Protection et la Culture des Plantes Alpines, Saxifraga longifolia, &c.—*Catalogue des Plantes contenues dans le Jardin Botanique Alpin de la Linnaea, à Bourg St. Pierre, Valais (No. 1)*, par Henry Correvon, Geneva.—*The Best Twelve Kinds of Vegetables to Grow for Exhibition*, by W. R. Baker, gardener at Knightleys, Exeter.

PLANT PORTRAITS.

ACIDANTHERA BICOLOR, Hochstetter.—*Icon. Select. Hort. Thensis*, t. 55. An Ixia-like plant, flowering in early autumn. The flowers are irregular, yellow; the three lower segments each provided with a purplish spot at the base.

ALOE THRASKII, Baker.—*Icon. Select. Hort. Thensis*, t. 60. *Gard. Chron.*, v. 1876, p. 400, c.c. It flowers in the winter-garden in winter.

BORONIA SERRULATA, Smith.—*Icon. Select. Hort. Thensis*, t. 56.

GENISTA GLABRESCENS, Briquet.—*Icon. Select. Hort. Thensis*, t. 52. Hardy shrub, with stalked, trifoliate leaves, and small, stalked, yellow, papilionaceous flowers. It is a native of Central Europe and of the Riviera. It was formerly referred to Cytisus, but Cytisus as now understood has a distinct "strophile" to the seed, which Genista has not.

LEUCADENDRON LEVISANUS, Berg.—*Icon. Select. Hort. Thensis*, t. 54.—A South African Protead, with linear, spatulate, hairy leaves, and globose heads of the size of a Cherry, consisting of rounded bracts and small white flowers.

LOROPETALUM CHINENSE, Oliver.—*Icon. Select. Hort. Thensis*, t. 58 (see *Gardeners Chronicle*, xv, 1894, p. 343, f. 42. This shrub is not considered as hardy in Belgium).

PEAR SOUVENIR DE LYDIE.—*Bulletin d'Arboriculture*, &c., May. Medium size, pyriform, stalk short, in a depressed basin; skin citron-yellow, flesh melting, with no grit; flavour good or very good, season end of October.

PETIVERIA ALLIACEA, Lindl.—*Icon. Select. Hort. Thensis*, t. 59.

PLATTYTHECA CALIODES, Suetz.—*Icones Select. Hort. Thensis*, tab. 51. This is the pretty New Holland plant, better known as Tetratheca, or Tremandra verticillata.

RONDELETIA STRIGOSA, Hemsley.—*Icon. Select. Hort. Thensis*, tab. 53.—The Rondeletia anomala of gardens, now known to be a native of Guatemala.

ROSA ENGELMANNI, S. Watson.—*Icon. Select. Hort. Thensis*, t. 57. A native of the Central States of N. America, Colorado, Idaho, and Washington Territory. It was introduced into the garden of M. Van den Bossche from the nursery of Mr. Smith, of Newry, Ireland.

INFLORESCENCE OF PHYLLOSTACHYS HENONIS.

"It is to its habit that Phyllostachys henonis owes its surpassing loveliness. The two-year-old culms, burthened with the weight of their own leaves clustering in triplets, and borne upon innumerable branchlets, bend almost to the earth in graceful curves, forming a groundwork of most elegant beauty, from which the stems of the year spring up in slight zigzag, arching over at the top, and

waving their feathery fronds, the delicate green leaves seeming to float in the air. It must be from this quality that it derives its Japanese name, Ha-Chiku, the two Chinese characters with which it is written signifying the 'light or volatile Bamboo.' ("The Bamboo Garden," by A. B. Freeman-Mitford, C.B., p. 151.)

The inflorescence which we illustrate (fig. 153) was kindly sent by Mr. J. Rashleigh, of Menabilly, Cornwall, and was cut from a plant in his garden last autumn.

BOOK NOTICE.

THE VILLAGE SCHOOL READER. Arranged by Charles Savile Roundell. With numerous illustrations. (London: Horace Marshall & Son, Temple House, E.C.)

THIS is a book of extracts, beginning with the evergreen favourite "Eyes and No Eyes," from *Evenings at Home*. In fact, this *Reader* much recalls that famous old book; though of course it is up-to-date, and we are spared "improving" conversations and moral reflections, and have in their place quotations from standard authors, ranging from Isaac Walton to writers in the *Gardeners' Chronicle*. For the rest, we have subject-matter as diverse as that in the old *Evenings at Home*, and also relating to plants and flowers, insects, animals, and other objects of daily observation. There are passages from Bunyan's *Pilgrim's Progress*, and from various poets, the whole forming such a foretaste of delights as even a youthful reader should appreciate. The pictures are, on the whole, good, though it is a pity to have illustrated the much-disputed suggestion that rats steal eggs by one holding the spoil in its paws while two confederates seize its unusually long tail, and by it pull the creature along on its back.

If faults must be pointed out, objections may be made to the foot-notes. In the readings, especially from older authors, unusual words and phrases must occur, and in many places their explanation is (and wisely) left to the teacher. To quote two instances among many:—"To set whole alleys" of Burnet, wild Thyme, and Water-mint (Francis Bacon); the word "walks" is given as equivalent to "alleys," while the children are not helped to understand which plants are meant. Anne Pratt mentions that the root of Buttercups is "powerfully emetic," and for this we are to read "causing to vomit." The foot-note should be obvious as either an explanation of, or an equivalent substitute for, the words of the text.

Save for this carelessness, and the difficulty of finding extracts that shall all be acceptable to all tastes, the *Reader* is excellent as an introduction to the wealth of literature, and should be far more valuable than the many priggish and somewhat patronising books especially written for the improvement of youthful minds.

FOREIGN CORRESPONDENCE.

MANURE FOR FERNS IN POTS.

I AM desirous of getting some knowledge of the manures used in English gardens suitable for Ferns grown for cutting purposes. I have been using cow-stable manure-water upon my Adiantums, but I am not fully satisfied with the results. The plants are too easily over-watered, and the soil too apt to get sour at the bottom of the pots. Now I have found another manure that I like very much, and wish to have the opinion of some experienced English gardeners respecting it. In the spring of last year I had to throw to the rubbish-heap a great many old clumps of Adiantums. Suddenly my attention was directed to a small basket of pot Roses which had been afforded Clay's Invigorator, and I got the idea to try the same upon the old Ferns. I placed the best of them in the stove-house, and got a teaspoonful of the manure. In a fortnight I was astonished to

find that the old Ferns, good for nothing as I formerly thought them to be, had thrown up a large bunch of stout and straight stalks, apparently stronger than those coming from unmanured plants. In about a fortnight they got another teaspoonful of the Invigorator, and in six weeks I had as fine a lot of plants as anyone could wish. Since that time, trials with the manure have been made upon several kinds of pot Ferns, and the results were always excellent. I take especial care that the manure does not touch the young shoots, as in that case the tips of the leaves get burned. One is warned against an excessive use of the Invigorator, but I would like to know what is excessive in this case? X.

HARDY CACTI IN NORTHERN EUROPE.

The following Cacti are cultivated in the open air in the botanical part of the Bergian Garden, in the vicinity of Stockholm, Sweden:—Opuntia missouriensis, O. fragilis, O. camanchica, in several vars.; O. Ratinequiana, O. R. var. arkansiana, O. xanthostema, O. rhodantha, O. humilis, Echinocereus mohavensis, Cereus phoeniceus. N. E. D., Sweden.

PHILODENDRON SELLOUM.

THIS handsome and curious plant is rarely seen in flower in this country. It, however, flowered freely and regularly every year for over 20 years with the late Mr. W. H. Tillet, of Norwich. From his plant the drawing I enclose was made [which our artist has reproduced (see fig. 154, p. 411). Ed.] From the drawing it will be observed that the plant had at the time one flower and two buds. The plant was about 10 feet high from the pot to the flower, and it was grown in a cool conservatory, the pot being stood in a large tub of water, into which the long straggling roots shown in the drawing found their way. The scent from one flower was sufficient to fill the whole conservatory and dwelling-house as well. E. D. Tillet, Norwich.

HOME CORRESPONDENCE.

A GOOD CROP OF MELONS.—On visiting Mr. J. Snell, the head-gardener at Farnley Hall, Otley, I noticed a fine lot of Melons of a white fleshed seedling, raised at Grimston Park, from Beauty of Sion and The Countess. Eight plants were carrying twenty-four fruits, whose total weight was over 100 lb., several of the fruits weighing 7 lb. each. The plants were planted out in a narrow bed; a space 16 inches square and 6 inches deep being given to each. R. P.

DAHLIAS AS HEDGE PLANTS.—We find the stronger-growing Cactus and single varieties very useful and ornamental for the purpose named; they come in admirably as screens in the kitchen garden, or for hiding any unsightly object during the summer months. In dull, more or less sunless seasons the better varieties of Cactus Dahlias do not blossom at all well in the north. We have found it an advantage to plant them close to a wall or wooden fence facing south or west. They require plenty of water in such positions when the weather is at all dry. A good mulch of half-rotted manure is also desirable. Those of your readers who have not a good supply of ordinary manure for digging into the soil before planting will find a sprinkling of a good artificial manure very beneficial to the plants—about a handful to a square yard of the surface of the soil is quite ample; we have done this for some years with good results. Having a good lot of strong roots of both Cactus and single Dahlias, we decided this year to keep them as long as possible in their winter quarters, and then plant them out direct where they were to bloom. This was done the last week in April, and they are now 15 inches in height, and well established. They were wintered in a cool frost-proof vegetable cellar. H. J. C., Grimston Park, Tadcaster, June 10.

SPORTING OF ACALYPHA HISPIDA.—In contrast to the usual reddish-crimson inflorescences of Acalypha hispida, there is a plant here that has produced, in addition to the above, several of these

tail-like racemes of quite a distinct fawn colour, which have a remarkable appearance. It would be interesting to know if this is characteristic of this plant. *J. G., Botanic Gardens, Liverpool.*

LETUCES.—We should just now be having in our markets Lettuces in abundance, if not yet owing to the long-continued dry weather very large. There are Lettuces in fair abundance, though none too well hearted; but, alas! how roughly presented. It does not seem to dawn on the minds of growers for market that Lettuce leafage is thin and brittle, and soon susceptible to harm; if they were, they would take more care of them in packing, and treat them somewhat more tenderly. I saw Lettuces recently being pulled and put into baskets for market. Beyond the dirt being shaken from the roots, there was no sort of trimming, and they were pressed into large baskets with none too much tenderness; but a few of the best-hearted ones had the roots cut off, they were then stood erect and close together in shallow boxes, the leafage getting no bruising, and the best hearts could be seen at a glance. This seemed to me to be such an admirable method of marketing Lettuces that I wonder it is not generally adopted; certainly in such case the Lettuces do look clean and wholesome. At a market-stall were baskets of Cabbage-Lettuces; customers sought in these for the best hearts. In doing that, the contents of the baskets were turned over and over, getting torn, bruised, and dirty. How repulsive is all this to one's notions of cleanliness and fitness! Very likely English market gardeners, when they have good Cabbage-Lettuces, would smile at the suggestion that they would be far more presentable in the market and in shops, and be worth more money, were each one lightly wrapped in tissue paper, and packed in flats two or three deep, and not crushed, roots, dirt, and all, into large, deep baskets, from whence later they emerge almost unrecognisable. It is to be deplored, but the fact remains that our market methods are a long way behind those of foreigners; indeed, one of the chief of the foreigner's advantages lies in the superior methods he adopts in marketing. *A. D.*

MOTORS AND MANURE.—Generally there might be thought to be little connection existing between motor cars and manure, except that of an alliterative kind. But the connection I now refer to was brought to my notice by a gardener whom I met recently. He said our people are putting down their horses and carriages and setting up motor cars. Now that may be from their point of view all very well, but if there be no horses there will be no manure, and then how are the gardens to be dressed? Well, that reference serves to show that there is a connection between motors and manure far more intimate than was at the first imagined. My reply to his wondering complaint was, you will have to buy manure. But my friend was not to be put off in that way. He said, "That is all very well, but if motors take the place of horses generally where could manure be purchased?" No wonder then if the rapid growth of motor use does furnish some cause for uneasiness to gardeners. It is all very well to say that a sufficient supply of manure can be artificially obtained, but there is not a gardener in existence who believes that artificial manures are one-half so efficient as are animal manures, in spite of all that manure merchants may have said in their favour. What would market gardeners do were there no horses employed for motive force? Really the absence of the present abundant supplies of horse-manure would be to them an irreparable calamity. Doubtless the danger is remote generally, but in individual cases it is very near, and those gardeners who are thus deprived of their manure supplies will indeed merit entire sympathy. *A. D.*

A RARE NATIVE ORCHID.—It is interesting to know that amongst our native Orchids two species, *Neotinea intacta* and *Spiranthes Romanzoviana* are, so far as the British Isles are concerned, confined to Ireland. The former, a dense spiked Orchid, is now well represented by some half-a-dozen specimens which have flowered freely in the Royal Park at Greenwich. It is a plant of more interest than beauty, the spike of flowers, indeed the whole plant, reminding one of the sweet little *Habenaria alba*, colonies of which I have often come across at the base of the Snowdon range of hills. *Neotinea intacta* rarely rises more than from 3 to 4 inches from the ground, the leaves broadly oblong, and the flower-spike stout, and carrying about a

dozen yellowish-white flowers, which are inclined to one side, the lip 3-lobed, and the spur comparatively short. Bentham says the flowers are pink or pale purple, but as my specimens were recognised by Mr. Burbidge when here lately, I think there can be little doubt of their identity. With the exception of *Epipogium aphyllum*, I may say that I have now successfully flowered every native species of Orchid. *A. D. Webster.*

THE SPARROW CONTROVERSY.—I am more than surprised to find that so good a plant cultivator and of such general garden knowledge as Mr. William Earley has proved himself to be, has only but lately discovered that the sparrow eats aphids, a fact that was known long before this generation was born. As a child, it was often an amusement to me to watch them so employed, and

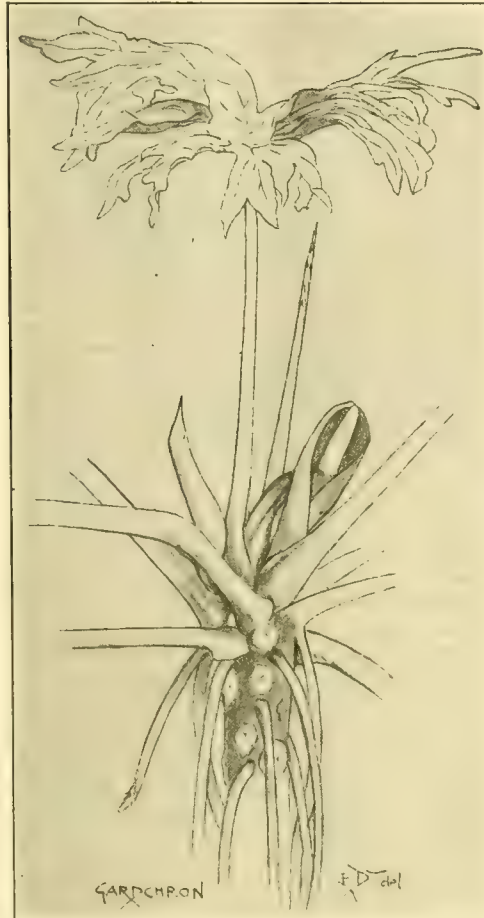


FIG. 154.—*PHILODENDRON SELLOUM* MUCH REDUCED.
(SEE P. 40.)
(From a drawing of E. D. Tillet, Esq.)

even as I have done these last few days. It is true, they feed the very young almost entirely on aphids, if they can get them; if not, small bloom-buds of fruit-trees, Gooseberries, and the like, half-formed seeds, and soft seeds of annual and herbaceous plants are their food, with a few of some kinds of caterpillars, but not those that feed on the Apple-trees, as I can testify at the present time. This and a little else at breeding-time is about all the good they do, which can be far better done by spraying, and in a more satisfactory way. Like Mr. William Earley, I have watched them with binocular glasses hundreds of times, and particularly of late, when driving away my beloved martins, in which they have so far succeeded that out of about twenty-five to thirty martins that came and began to build around my house, only one solitary nest is left occupied by the builders. There are four other finished nests or nearly so, and these are in the possession of the sparrows; four or five nests were begun, but from these the martins were driven off, and from other attempts at building. Now all the martins have departed, save and excepting those of the one nest on the west side. These beautiful and delightful birds are insect eaters pure and simple, and would, in

such number do me a vast amount of service; and yet I lose them by the vicious attacks of those pestilential avian robbers, the sparrows. These in numbers invade my chicken-coops, rear s or brooders, fight my chickens away from their food, and bring and feed their newly-fledged nestlings in numbers. How to cope with them we do not know, as we are obliged to have ingress and egress holes for the chickens, through which the sparrows pass without any invitation. Again I must differ with Mr. William Earley when he says, that "the real life-history of the sparrow to this day is not understood." It is better known than in the case of any other bird that I know of. It has been killed, and its crop examined by naturalists and scientists times without number, in all seasons of the year; even the young from the nests have been so treated. No bird that I am aware of has received so much keen and unbiassed attention from the naturalist as the sparrow. If Mr. William Earley, or any other of your readers, will get Mr. W. B. Tegetmeyer's book, with Miss Ormerod's notes, he or they will find that no means have been neglected by them and others to arrive at the truth as regards these incorrigible pests. For Mr. William Earley's information I may say that possibly the grubs that he saw the starlings feeding on are the tipula-grub (that of the Daddy-longlegs). I have watched them so at work early and late, and the amount of good that they do in this way is enormous. He is quite right here. I see in another portion of the *Gardeners' Chronicle* a reference to the Raspberry-caterpillar. This is fought for by the whitethroat and the hedge-sparrow. I have known the former, when nesting, to clear entirely of such insect-life about a hundred bushes, and watched them often thus busily employed. Speaking to a nurseryman a few days ago respecting the sparrow, he said in excited tones that he could not get seeds from many of his plants for them; they shelled his Sweet Peas also, and pulled up and destroyed many tender growing things, &c. Much more evidence could be given, but it is needless. But one thing I am pleased to say, and that is, that most likely we shall have a sparrow club formed in the neighbourhood, and which I, for one, shall endeavour to make a success. *Harrison Weir, Appldore, Kent, June 15.*

CENOTHERAS.—Since reading Mr. Arnott's very interesting article on *Cenotheras* in the *Gardeners' Chronicle*, p. 347, I have become interested in the variety called *speciosa rosea*, which was shown in London as a new variety last year. I and many others to whom I have spoken respecting this alleged new variety are under the impression that it is no other than the old variety (*Cenothera rosea*, which has been in our gardens for many years, and is a Mexican species. If Mr. Arnott, or any other correspondents who may have grown or seen the two side by side will tell us the difference, if there be any, it will be doing gardeners a favour, and save us from buying an old variety under a new name. *J. Winn, Hob Moor, Holgate, York.*

THINNING OF PLANTATIONS.—In 1894 you were good enough to publish an account of the treatment of plantations without regular thinning. I have returned from my May work in the plantation, and though I am not sure that I have made one convert to the system I adopted forty-four years ago, I am more convinced than ever that the late Mr. Enys was right in his theory, and that it will give better results in practice than any other system. In May, 1895, cuts were made 20 feet wide, leaving 80 feet of trees thick between each two openings. The former cuts, which had divided the wood into blocks of trees, eight trees wide and twelve trees long—trees having been planted 4 feet apart, the cuts were 12 feet wide in one direction, and 16 feet across the first cuts. The first cuts were begun in 1877, twenty years after the ground was planted. The 16-foot cuts were begun in 1881 and finished in 1883. From that date till 1895 only dead and suppressed trees were cut, and the growth of the plantation seemed coming to a standstill. Since the 20-foot cuts were made the growth of the trees left has been very good. The Beech and Silver Firs that were planted in the 20-foot cuts, November, 1895, at 6 feet apart, cover the ground pretty well this May. I am sorry I did not treat the part that was taken in from the field in the same way; it is only an acre, and as many as forty-three Larch died there in 1887. Two 20-foot cuts were made in it in 1895, since which not nearly so many have died; but I cut eight dead trees there

this year. In the year 1898 my son, who is in the Indian Forest Service, was at home. By his advice, I took out slender trees that stood in the thick parts of the wood, and some fine Larch, if they stood only 4 feet from each other. These parts have been underplanted during the last three winters with Beech and Silver Fir, 6 feet apart, and the wood is as near perfection as possible. Most of the Larch run up as straight as an arrow, 40 and 50 feet without a branch as big as my thumb. The effect of the cuts in the wood, and fresh ones made as the first close up, is to give enough air to those standing to keep them alive. I can still cut railing-poles of forty-three years' growth, and the thick parts between the cuts have their branches as effectually killed as they are when the leaf-canopy is complete. Seedlings of Oak, Ash, Beech, Spanish-Chestnut, and Silver Fir are coming up freely in places. *Henry Roper.*

CYTISUS ANDREANUS.—In reference to "J. F. A.'s" note, p. 373, I am forwarding you a few branchlets cut from a batch of the common Broom, planted here two years since. As you will notice, the flowers show a very strong strain of *C. Andreanus*. No doubt insect agency has been at work in the matter. The plants were purchased as ordinary seedling Broom, from the well known York nurseries. I need hardly say they have a very good effect, planted as groups in open spaces in our home woodland. *H. J. C., Grimston, Tadcaster.*

ABUTILON VITIFOLIUM.—The above plant makes a good standard or bush, and proves quite hardy here without the protection afforded by a wall. The flowers are of a pale lilac or porcelain-blue, and begin to open early in June, and are produced until early autumn. In *Nicholson's Dictionary of Gardening*, the species is spoken of as being a slow grower, while at Bicton it is quite the reverse. Cuttings root readily in the spring if taken off with a heel of old wood; or in September taken from the points of the shoots and placed under a bell-glass out of doors. I send a few sprays for you to see. *J. Mayne, Bicton, Devonshire.* [Very large, beautiful flowers of the hue described by our correspondent. Ed.]

FROST IN MIDDLESEX.—A slight frost was experienced in this portion of the Thames Valley on the morning of Tuesday the 18th, and some early Ashleaf Potatoes, somewhat late planted, were slightly blackened. *E. H. Jenkins, Hampton Hill.*

FROST IN NORTHAMPTONSHIRE.—We registered here this morning 2° of frost, and I find Vegetable-Marrows, Runner and Dwarf Beans, Potatoes, a foot high, completely blackened. This being so with the ground in the dry condition it now is, what would have been the result had it been moist. So far, the June of 1901 is a remarkable one. The lowest readings for the present month here have been on the 8th 36°, 15th 33°, 18th 39°, 19th 30° Fahrenheit. *J. R. Wilson, Sulby Hall Gardens, Rugby.*

FROST IN YORKSHIRE.—We had a severe frost here on the morning of the 19th inst., and it has done much damage to tender plants. The minimum temperature at 3 feet from ground fell to 25° Fahr., and for several hours everything was white with frost. At Malton, 9° of frost was registered, and Potatoes, Scarlet Runners, Beans, Dahlias, &c., in places are quite black. I do not remember a frost of such severity at this mid-summer season. The sky was bright without a cloud or breath of wind. Many of the cottage gardens near the water-courses have suffered severely. *Bailey Wadds, Birdsall Gardens, York, June 19, 1901.*

LAW NOTES.

RE WALTER GOODLIFFE, NURSERYMAN, WORTHING.

This debtor, in the course of his public examination at the Brighton Bankruptcy Court on Thursday, last week, stated that his liabilities amounted to £7,038, and his assets to £866. He commenced business at Worthing in 1897, prior to which he had been a private tutor. He made a private arrangement with his creditors at Cambridge in 1895, when his liabilities amounted to about £1,000, and a com-

position of 2s. in the pound was paid. When he went to Worthing he had a capital of £1,000, and he bought a business consisting of house, land and ten glasshouses for £2,760. The balance of the money he required was raised on mortgage. In 1898 he bought more land for £1,400, the vendor advancing him the whole of the money on mortgage. About that time he had £600 left him by his mother, with which he put up new glasshouses on the land which he had bought. These cost him about £3,500. Altogether he had spent £7,650 on the property, and he had mortgages amounting to £4,500. When the property was valued for the purposes of the mortgage, it came out at £7,200. In 1891 another valuation was made, which came out at £8,500. If he could realise what the property and stock cost him he would be solvent. He first found himself in difficulties in 1899, when his working capital had gone. He then raised a further £300. Last year the mortgagees gave him notice to pay off the mortgages, and he then tried to form the business into a company, but there was a difficulty in transferring the mortgage. Owing to that, the thing fell through. When the houses were in full working order he estimated his stock to be worth £3,000. During the last two years there had been a loss of £1,243 on the business. He had been ill since February last, and his business had depreciated in consequence. He owed his wife £1,000 for money lent. The examination was formally adjourned until the next court.

MECONOPSIS HETEROPHYLLA.

At the show of the Royal Horticultural Society on June 8, one of the most modest but prettiest exhibits was that of the Poppy here illustrated (fig. 155). It is an annual, with orange-red flowers, and a deep maroon centre. It is a native of California, and was introduced to Chiswick more than sixty-five years ago, but has now been re-introduced by Mr. Pritchard, of the Nurseries, Christchurch, Hants. The plant produced its flowers from seed sown four months since.

SOCIETIES.

ROYAL HORTICULTURAL.

JUNE 18.—The usual fortnightly meeting of the Committees of this Society was held in the Drill Hall, Buckingham Gate, Westminster, on Tuesday last, and again there was more space applied for by exhibitors than the Hall affords. There were very few Orchids shown, and but one Award of Merit was recommended by the Orchid Committee. On the occasion a fortnight previously, the show was remarkable for the collections of Eremurus, but no less noteworthy on Tuesday last, were the groups of Pæonies and Roses, the latter being particularly good.

The FLORAL COMMITTEE recommended an Award of Merit to each of the following plants, *Gloriosa lutea*, *Dictamnus caucasicus*, *Sedum kamschatcicum* fol. var., *Asplenium trichomanes* var. bi-pinnata, Border Carnation Duchess of Roxburgh, and Tea Rose Lady Roberts. This same Committee recommended as many as twenty-three medals, including one gold medal, which goes to show what a large and varied exhibition it was.

There were not many fruit exhibits, and only one award was recommended to a novelty. This was to a fine Strawberry named The Laxton, and shown by Messrs. LAXTON, BROS., Bedford.

At the afternoon Meeting thirty-five new Fellows were elected, making a total of 535 elected since Christmas.

Colonel WHEATLEY, High Bailiff of the Royal Parks, read a paper on "Gardening in the London Parks." Sir T. LAWRENCE, presided.

Floral Committee.

Present: Chas. E. Shea, Esq., in the Chair; and Messrs. C. T. Druery, H. B. May, R. Dean, J. W. Barr, J. Jennings, N. F. Barnes, W. Howe, W. Bain, C. R. Fielder, H. Selfe Leonard, J. D. Pawle, Chas. Dixon, E. T. Cook, W. P. Thomson, Chas. E. Pearson, H. J. Jones, J. H. Fitt, and E. H. Jenkins.

Mr. B. R. DAVIS, Yeovil Nurseries, Somerset, exhibited some marvellously good flowers of tuberous Begonias. Of the many varieties shown, the following double flowers were remarked as being of conspicuous merit: Miss Griffith, white,

palely tinted, petals prettily fimbriated; Mrs. Stothert, yellow; Argus, bright crimson; Mrs. H. J. Jones, reddish-carmine, with wavy petals; Hecla, scarlet; Orion, an immense scarlet flower, with several centres; Mr. Dunbar Wood, light orange coloured, with yellow centre; Hector, scarlet; Lord Milner, pink; Cosmos, white, with faint blush; and several remarkable varieties of single flowers, heavily crested, in some cases the crest covering the greater part of the surface of the petals (Silver Banksian Medal).

Sir TREVOR LAWRENCE, Bart., Burford, Dorking (gr., Mr. Bain), exhibited some splendid spathes of Anthurium Andromedum Lawrence, about 6 inches across. The spathes and spadices of this variety are perfectly white; also Erigeron Coulteri, with white flowers and very narrow petals; and a splendid plant of Allium pedemontanum, a species with rosy-purple, bell-shaped flowers, produced in clusters, and lanceolate leaves. It was introduced to this country in 1817, and certainly makes a very pretty pot plant (Cultural Commendation).

Messrs. PAUL & SON, The Old Nurseries, Cheshunt, exhibited cut Roses, and included blooms of their new Rambler, known as Paul's Tea Rambler. The flowers are of a reddish-rose colour, and the variety has the characteristics of Crimson Rambler and of a Tea Rose. Many varieties of the Penzance Sweet Briars were very beautiful, also *R. rugosa atro-purpurea*, Eugénie Lamesch, Austrian Copper, *R. polyantha grandiflora*, &c. The same firm exhibited a group of flowers of Pæonies, in which the varieties Whitley, large, single, white, with yellow centre; and Whitley, plena, were very conspicuous. La Fraicheur, fawn and rose colour; Lady Carrington, big double flower of blush colour; and Virgo Maria, double, white, were also noticed (Silver Flora Medal).

Tuberous-rooted Begonias and Ivy-leaved Pelargoniums were brilliantly shown by Mr. H. J. Jones, Ryecroft Nursery, Hither Green, Lewisham. The Begonias consisted of double and single-flowered varieties, and were good and showy. Of doubles, some of the most noteworthy were Princess Ena, yellow; Teddy Silverthorn, rich rosy-pink; Miss S. Carnegie, white with pink margins to the petals; Mrs. W. H. Webb, rich rosy-salmon colour; Ellen Terry, pink; and Ariel, white, very pretty. Good single flowers were Admiration, bronzy shade of yellow; Walter Smith, deep crimson; Sylvia, pure white; Pearl, a fine pink flower with fimbriated petals; and Apple Blossom, white, shaded to deep rose colour at the margins. Several varieties with crested flowers were interesting. Some of the best of the Ivy-leaved Pelargoniums were Jersey Beauty, Mrs. J. D. Day, Mrs. Hawley, Baden Powell, and Leopard, all of which have double flowers. Leopard has mauve-coloured flowers, irregularly splashed with scarlet, and Baden-Powell is of very pale flesh colour, with bright rose spots on upper petal (Silver Banksian Medal).

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea, exhibited a group of fine plants of their new climbing Rose Electra, a hybrid from *R. multiflora* simplex and Rose W. A. Richardson. Pillar plants 8 feet high, and standards also were exhibited, and one and all of them were profusely furnished with many-flowered trusses of bloom, which are about 3 inches across, open to buff-yellow, and pass off a semi-double white.

The same firm exhibited sprays of flowering shrubs, including three pretty varieties of Philadelphus Lemoinei, and known as Gerbe de Neige, Mont Blanc, and Boule d'Argent, the last-named having double flowers. Philadelphus grandiflorus was shown by a grand bunch; then there were Viburnum plicatum, Robinia hispida, Magnolia Watsoni, Cassalpinia japonica, Styrax japonica, Solanum crispum, with bold, blue flowers; Weigela rosea Eva Rathke, and the fine golden-yellow Elder, Sambucus racemosa var. All of these shrubs are extremely valuable for the decoration of the pleasure grounds. In addition to the above exhibits, the firm of Messrs. VEITCH again exhibited large groups of Streptocarpus and Gloxinia, both strains being of first-class quality. Many of the Gloxinias were named varieties of great merit. In addition to the exhibits already mentioned, Messrs. VEITCH exhibited a large group of cut Pæonies, in about eighty varieties, a very representative collection of choice varieties. A Gold Medal was awarded in respect to the whole of the exhibits from Messrs. VEITCH.

Mr. H. B. MAY, Dyson's Road Nursery, Upper Edmonton, exhibited plants including varieties of Coleus, such as Mrs. R. H. May, yellow, spotted and splashed with purple; Golden Gem, Crimson Gem, Mrs. Tollworthy, mottled with red, purple, and yellow; and others, all very attractive. Ornamental-leaved Pelargoniums were shown in eight varieties, of which W. Sandy and H. Cox were very brightly coloured; most of them were tricoloured varieties. Statice imbricata, and S. profusa were shown, and some Fuchsias in pots, namely, Ballet Girl, double white, with red sepals; Madame Rosaine, also double white, with red sepals; Dr. Topinard, single white; Mauve Beauty, a very distinct and attractive variety with double corolla of mauve colour and red sepals. There were several single-flowered ones in addition to those we have mentioned (Silver Banksian Medal).

Messrs. HUGH LOW & Co., Bush Hill Nurseries, Enfield, exhibited a group of Souvenir de la Malmaison Carnations, and the following well known varieties were well represented: Sir Chas. Fremantle, Sir Evelyn Wood, Princess of Wales, Calypso, Lady Rose (very lovely), Lord Rosebery, Lady Grimston, &c. (Silver Banksian Medal).

Some cut flowers of the same type of Carnation were shown by Lady NINA BALFOUR, 14, Grosvenor Crescent, London, S.W. These were of the very finest quality, and were indicative of the most successful cultivation (Silver Banksian Medal).

Mr. GEO. PRINCE, of Oxford, made a glorious exhibit of Roses, and as usual the Tea-scented varieties were particularly to the front. So many were shown that we must refrain from mentioning particular varieties (Silver-gilt Flora Medal).

Messrs. D. PRIOR & SON, Colchester, exhibited a group of cut Roses, including garden and exhibition varieties, in which those of the latter section appeared to us to be particularly good in size and substance. We may instance such varieties as Mrs. JNO. LAING, Marechal Niel, Duke of Edinburgh, Niphetos, Helen Keller, Maman Cochet, Gustave Piganneau, The Bride, Duchess of Bedford, &c. (Silver Flora Medal).

Messrs. B. R. CANT & SONS, Colchester, had a very nice group of cut Roses, and showed garden varieties in fine bunches. Among the exhibition varieties, especially good were Madame Cusin, Comtesse de Nadaillac, Cleopatra, Mrs. W. J. Grant, Medea, Marechal Niel, &c. The most conspicuous among the garden varieties were Papa Contier, Bardon Job, Janet's Pride, Madame René, Gerard, Thalia, and Polyantha simplex, both well known for their small but abundant white flowers; Blanche Double de Coubert, Ma Capucine, &c. (Silver-gilt Flora Medal).

Messrs. W. PAUL & SON, Waltham Cross Nurseries, Herts, confined their exhibit of Roses to varieties the firm has raised and distributed. Those shown on this occasion included Corallina, Tennyson, Boadicea, sulphurea, &c., all of them comparatively new valuable sorts, but they have been described many times in these pages. Also R. Wichuriana rubra, obtained from crossing R. Wichuriana with the Crimson Rambler.

Messrs. W. SPOONER & SON, Woking, Surrey, exhibited Tea and garden Roses, in bunches, representative of a large number of varieties; but they were arranged rather too stiffly for effect (Silver Banksian Medal).

Messrs. GEO. JACKMAN & SON, Woking, Surrey, had an exhibit of Rose blooms of great variety, including many representatives of the "garden" section, as well as exhibition sorts. The effect of the bunches of garden Roses would have been better had they been less hidden by Gypsophila.

Messrs. F. CANT & Co., Braiswick Nursery, Colchester, exhibited a grand lot of Roses, in which the garden varieties, as well as some choice exhibition sorts, were splendidly shown. Of these, the most conspicuous were Madame Hoste, Mrs. W. J. Grant, Bessie Brown, Madame Ravory, a new Tea Rose, with flowers in colour like an Apricot; Madame Jules Grolez, Antoine Rivoire, and other new ones. Of garden Roses, Paul's Single White, Marquis of Salisbury, and many others were noticed (Silver-gilt Flora Medal).

Messrs. J. CHEAL & SONS, Lowfield Nurseries, Crawley, Sussex, exhibited a collection of sprays of ornamental shrubs of such species as Quercus Concordia, the Golden Oak; Lupinus arboreus, Phlomis fruticosa, Catalpa syriacifolia aurea, Spiraea opulifolia (a very fine flowering species), Robinia hispida, and many others.

LORD ALDENHAM, Aldenham House, Elstree (gr., Mr. Beckett), exhibited a group of well-flowered Streptocarpus, and was recommended a Silver Flora Medal.

Messrs. KELWAY & SONS, Langport Nurseries, Somerset, exhibited a group of flowers of herbaceous Peonies and Pentstemons. Conspicuous among the Peonies were Summer Day, double white; Mrs. Rushton, Dorothy, W. Kelway, Leonard Kelway (rose colour), Lady Beresford, Diadem, Empress of Russia, and many others. The Delphiniums were also good, but no novelties gained awards on this occasion (Silver-gilt Flora Medal).

Mr. R. H. BATH, Ltd., Wisbech, exhibited a group of Peonies which was said to contain about 100 varieties. The flowers were of fine size, and we need hardly say the group was a very representative one. The variety Lucrece, pink, with white centre, was very attractive (Silver Flora Medal).

Mr. A. W. WADE, Colchester, exhibited flowers of herbaceous plants, such as Inula glandulosa, Incarvillea Delavayi, herbaceous Peonies, also Lilium umbellatum, &c.

Mr. A. PERRY, of the Hardy Plant Farm, Winchmore Hill, London, N., had an exhibit of hardy flowers of more than ordinary quality. All the species were well shown. There were Eremurus Bungei and E. robustus, and very strongly-grown Heuchera sanguinea; as many as thirteen species and varieties of Heuchera were included in the exhibit; many Tritomas, several varieties of Dictamnus caucasicus, Inula Hookeri, Nierembergia rivularis, a dwarf growing plant with white bell-like flowers; Nymphaeas, a fine lot of Incarvillea Delavayi, and many other species, including two that are described under "Awards" (Silver-gilt Banksian Medal).

Messrs. WALLACE & Co., Kilnfield Gardens, Colchester, exhibited a group of hardy flowers, including Spanish Irises, Calochortuses, Incarvillea Delavayi, Lychnis viscaria splendens plena, the grandiflora variety of Campanula persicifolia alba, Lilium umbellatum in variety, Heuchera micrantha, herbaceous Peonies, Lilium Henryi, &c. (Silver Flora Medal).

Messrs. BARR & SONS, King Street, Covent Garden, exhibited cut flowers of varieties of Spanish Irises, and a considerable number of herbaceous Peonies—Buonaparte, very bright rosy-purple; Cleopatra, single; The Moor, double, crimson; Sir Visto, semi-double, prettily tinted, &c. (Silver Banksian Medal).

Messrs. J. PEED & SONS, Roupell Park Nurseries, Norwood Road, London, S.E., showed a group of hardy plants and cut flowers. Among the cut flowers there were excellent bunches of Pyrethrum roseum, &c. Of plants in pots, we noticed a variety of Inula glandulosa with thread-like florets, named laciniata, Thalictrum petaloideum, Adiantum folium, and Aquilegfolium; and various alpine species, of which some were in flower (Silver Banksian Medal).



FIG. 155.—MECONOPSIS HETEROPHYLLA (AN ANNUAL POPPY).
(SEE P. 412.)

Messrs. DOBBIE & Co., Rothesay, N.B., and Orpington, Kent, made a most showy display with Violas, fancy Pansies, and Sweet Peas. Among the Peas were fine bunches of the varieties Emily Henderson, white; Salopian, crimson; Lady G. Hamilton, Aurora, Lottie Hutchins, the bizarre-looking "America," Creole, Golden Gleam, pale yellow; Countess Cadogan, with deep blue wings and purple standard; Duchess of York, white and pale pink; Fashion, Triumph, &c. (Silver Flora Medal).

Mr. THOS. S. WARE, Ltd., Hale Farm Nurseries, Feltham, London, exhibited a group of cut flowers from the open garden, including a large proportion of the species now in season. Lychnis Haageana, with its large, intensely scarlet-coloured flowers, was conspicuous, and some varieties of herbaceous Phloxes; also many varieties of Peonies were well shown (Silver Banksian Medal).

Mr. ED. DAVIS, West Dene Beech, Alton, Hants, exhibited a number of blooms of Viola on paper collars; and Mr. M. PRITCHARD, Christchurch Nurseries, Hants, exhibited a large plant of Spiraea Aruncus var. plumosa. It is said to flower

three weeks earlier than the type, and has erect flower spikes. The plants grow about 5 feet high. Mr. PRITCHARD also showed flowering growths of Tropaeolum Leichtlini, an orange coloured form of T. polyphyllum.

Lady A. TATE, Park Hill, Streatham (gr., Mr. W. Howe), exhibited flowering and fruiting branches of Trachycarpus (Chamerops) Fortunei, the well-known hardy Palm.

Messrs. GEO. BOYES, Aylestone Nurseries, Leicester, again exhibited the Earl Roberts Carnation, and cut blooms of many other varieties.

Awards.

AWARDS OF MERIT.

Asplenium trichomanes var. *bi-pinnate*.—A very pretty little Fern shown by Mr. C. T. DUBURY, 11, Shaa Road, Acton, and having bi-pinnate fronds and narrow segments.

Carnation Duchess of Edinburgh (Gow).—This is a yellow ground flower with purple and pale red markings, of considerable size and good form. Mr. JAS. DOUGLAS, Edenside Nurseries, Great Bookham, who exhibited the flowers, states that it is a first-class variety for the border, and grows strongly and well.

Dictamnus caucasicus.—Under this name, Mr. A. PERRY, of Winchmore Hill Nurseries, exhibited flowers of a very strong-growing Dictamnus, the flowers of which were better in colour than D. albus (Fraxinella) is usually seen.

Gloriosa lutea.—This plant has perfectly yellow flowers, rather smaller in size than those of G. superba. It was shown by the Hon. E. Cecil, Lychett Heath, Poole.

Sedum kamshaticum fol. var. —This is a very prettily variegated variety of the species, and will make a valuable plant for edging to flower-beds, or for the rockery, and for carpet-bedding in establishments where this style of gardening is still practised. Shown by Mr. AMOS PERRY, Winchmore Hill Nurseries.

Rose Lady Roberts.—Messrs. F. CANT & Co., Colchester, exhibited this fine new Tea Rose. In colour it is rich Apricot yellow, but the bud is almost red. It is a large "smooth" flower of good form. The large glossy leaves would seem to indicate a good habit of growth.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the Chair; and Messrs. Jas. O'Brien (Hon. Sec.), de B. Crawshaw, H. M. Pollett, H. Ballantine, E. Hill, H. T. Pitt, J. Wilson Potter, W. H. Young, H. J. Chapman, F. A. Rehder, H. Little, H. A. Tracy, and J. Douglas.

Orchids were on this occasion very few.

FRED HARDY, Esq., Tyntesfield, Ashton-on-Mersey (gr., Mr. T. Stafford), showed the dark-coloured Cypripedium Lawrenceanum nigrum, and four plants of C. Gowerianum magnificum. Also a plant of the original scarlet-tinted Sophro-Cattleya × George Hardy, which received an Award of Merit, May 10, 1898; and the much finer and remarkably distinct Sophro-Cattleya × George Hardy, Tyntesfield variety, which now secured a similar award.

Messrs. B. S. WILLIAMS & SON, Upper Holloway, were awarded a Silver Banksian Medal for a group consisting of Laelia-Cattleya × Canhamiana, and its variety L.-C. × C. Edouard André; Cypripedium exul, C. × superciliale, C. superbiens, C. Mastersianum, Dendrobium Dalhousieanum luteum, Anguloa Clowesii, Laelia tenebrosa, L. × cinabrosa, Platyclinis latifolia, Oncidium curtum, and Odontoglossum Pescatorei.

REGINALD YOUNG, Esq., Fringilla, Linnet Lane, Sefton Park, Liverpool (gr., Mr. Poyntz), sent flowers of Cypripedium × Kerchoveanum (Curtisii × tarbatum), with some resemblance to C. × superciliale, which was also sent for comparison, though amply distinct: C. × Ganyuede (tonsum? ananthurum superbum?), a finely-formed flower, with dark base to the upper sepal, which had white upper portion, both sepals and lip also being coloured on the surface with chocolate-purple; C. × Carnusianum and Odontoglossum gloriosum albidum.

Mr. A. J. KEELING, High View Nursery, Cottingley Bingley, Yorkshire, showed Laelia × Diana (Dayana × purpurata rosea), a good flower, with lilac-tinted and veined sepals and petals, and dark claret-purple front to the lip; Masdevallia × falcata (Veitchiana × Lindeni), with showy orange-coloured flowers, tinged with scarlet on the outer portions of the segments; a good Laelia tenebrosa, the blue Dendrobium Victoria Regine, and Miltonia flavescens.

C. J. LUCAS, Esq., Warnham Court, Horsham (gr., Mr. Duncan), sent as Odontoglossum × Lucasianum a reputed hybrid between O. Hallii and O. cristatellum. It resembled a small form of O. Hallii. The sepals were chocolate coloured, with yellow tips; the petals similarly coloured, but with slight yellow marking on the chocolate-coloured base; lip yellowish, with brown spots; the crest scarcely so much developed as in a typical O. Hallii.

A. H. SMEE, Esq., The Grange, Hackbridge (gr., Mr. Humphreys), sent Pholidota ovata, one of the erect-jointed, section, with a drooping raceme of whitish flowers.

J. GURNEY FOWLER, Esq., Glebelands, South Woodford gr., Mr. Davis), showed a fine plant of *Cypripedium callosum* Sanderae with four flowers.

J. BRADSHAW, Esq., The Grange, Southgate (gr., Mr. Whitelegge), sent *Lulio-Cattleya* × C. G. Roebling (C. Gaskelliana × L. purpurata), a very fine hybrid, with white sepals and broad labellum, the front of which is of a bright light purple, with broad white-frilled margin, and yellow disc.

Awards.

AWARD OF MERIT.

Sappho-Cattleya × *Geo. Hardy* "Tyntesfield variety" (C. Acklandiae × S. grandiflora).—Flower much larger than the light carlet original form. Sepals and petals bluish-white, tinged with rose, sparsely marked with purple spots; lip openly displayed, whitish at the base, veined with rose; front lobe of the lip and column dark rose.

Fruit and Vegetable Committee.

Present: Jos. Cheal, Esq., in the Chair; and Messrs. Henry Eslings, H. Markham, S. Mortimer, A. Dean, E. Beckett, Geo. Kelf, M. Gleeson, A. Ward, F. Q. Lane, J. Smith, Geo. Wythes, H. Poupart, Jas. H. Veitch, H. Balderson, H. Somers Rivers, and W. Bates.

Mr. A. J. HARWOOD, fruit and Asparagus grower, Colchester, showed extraordinarily fine Asparagus, receiving a Cultural Commendation. Five bundles of about 100 each were shown.

Lady A. TATE, Park Hill, Streatham (gr., Mr. Howe), showed two dozen of as fine Brown Turkey Figs as we have ever seen, and received a Silver Banksian Medal for the exhibit.

Numerous Melons were shown for certificates, but none met with the approval of the Committee. They comprised white, green, and yellow fleshed varieties.

Mrs. McCRAUGH, Thornhill, Stanton Park, Bakewell, showed about two and a half dozens of Lemons, of large size, receiving a Cultural Commendation.

Awards.

FIRST-CLASS CERTIFICATE.

MESSRS. LAXTON BROTHERS, Strawberry specialists, Bedford, showed a new Strawberry, "The Laxton," a fine large, scarlet coloured, conical or wedge-shaped fruit, of a finer colour than their Royal Sovereign, and ripening rather earlier than that famous variety. The fruits were shown alongside of the latter for comparison sake. A fruiting plant of the new variety was shown, which exhibited enormous cropping capabilities. The fruit is of better flavour, is as rich as Royal Sovereign, it is much firmer, and not so liable to rot on the ground in damp weather.

The Lecture.

GARDENING IN THE LONDON PARKS.

SIR TREVOR LAWRENCE, V.M.H., presided over the General meeting at 3 o'clock, and introduced Colonel WHEATLEY, R.E., as High Bailiff of the Royal Parks. These the lecturer described as central, which are St. James's, Green, and Hyde Parks, and Kensington Gardens; Regent's Park, Primrose Hill, Hampton Court, &c. He had held office for twenty-five years, and during that time he had visited all the public parks and gardens at home and abroad, to obtain desirable information. The phase of work furnished in the Royal parks, &c., was purely decorative, and not botanical. His present information was largely obtained from the various able garden or park superintendents. Turning to trees, he said that fog, smoke, and foul air prevented many of these from being grown as they used to be. The Plane was the London tree *par excellence*. The Canadian Poplar was good up to a certain stage of growth, when it began to lose its lower limbs; but it was a capital screen-tree. The Horse-Chestnut, Oak, and some other trees, would not now thrive. The Tulip-tree was a capital town tree, and deserved a wider growth. He thought the Ginkgo (*Salisburia adiantifolia*) would also do well. Turning to bedding, that could not be neglected; but wherever a vacancy occurred, something must be ready to fill the void. That was now an imperative necessity. Preparations for spring bedding were made in the autumn, bulbs being planted in November, after the beds had been trenched and manured. Some of the quantities needed were mentioned. Old bulbs ever so well cared for were indifferent, and did not flower so finely or so early as new ones did. After blooming, they had to be lifted before the foliage was matured; hence were not capable of giving good flowers the second year. A large quantity were planted on grass. The defect of that method was that the grass could not be mown until late, and then it wore a brown appearance for some time. By making careful selection, bulbs may be had in good succession for several weeks.

A long list was given of diverse trees and shrubs, both flowering and foliage, all of which greatly helped to decorate in the spring and early summer. Special emphasis was laid on grouping these to produce the best effects.

Turning again to bedding, the Colonel said that it had undergone a great change. Mixed beds, of far more pleasing

appearance, now took the place of the old masses of flowering plants and carpet-beds. Some time since he had the plants used to fill a large one of the latter type counted, and found that they amounted to 1500. In the central Parks there were 215 beds; Regent's Park, 98; and at Hampton Court, 194. Some beds filled with old-fashioned plants and a few bulbs mixed with those, were cheap, yet effective. Very noble decorative results followed from planting Ailanthus, Catalpas, and Paulownias. These are cut down each winter, and the new growths resulting were very effective. A pleasing variation in decoration was obtained by plunging plants in pots into beds, especially when carpeted with Violas, Musk, &c. Hydrangeas were used with great effect in Regent's Park in that way. Their great difficulty, such was the rapid growth of stock, was to find space for the plants in the winter. No sooner was a new house put up than it was immediately filled, and more room was needed. Rhododendrons were noticed, and it was said that not only would none of the better varieties do a second year, but even when returned to Knap Hill it took them three or four years to thoroughly recover from their exposure to the town atmosphere. Hence the arrangement made with Mr. Waterer, who sent up new plants each spring, and took back the old ones. Bamboos, it was hoped, would have done well, but only one or two, such as B. Metake, stood the London winter. Their plan was to have a quantity in pots, and to house these for the winter, and then to plunge them out-of-doors in the summer. Special emphasis was laid on the keeping of good grass, because of the great wear and tear. Country grass soon died; it was of diverse character and quality from the London grass, hence they lifted portions of turf from some of the parks for mending purposes, and seeded down the spaces thus cleared. They were immensely indebted to Mr. W. Carruthers, late of the British Museum, for his analysis of grasses, and in selecting grass seeds for sowing; his advice had been of exceeding value.

The lecture was one of exceeding interest, and well merited the high compliment paid it by Sir Trevor Lawrence, on whose proposition a cordial vote of thanks was accorded to Colonel Wheatley, who, in reply, dealt with some objections to the gravel-paths of the parks, stating that for so much of the present roughness of the surfaces the present drought was chiefly to blame.

LINNEAN.

JUNE 6.—Mr. W. Carruthers, F.R.S., Vice-President, in the Chair.

The adjourned debate was resumed on Mr. H. M. Bernard's paper "On the necessity for a Provisional Nomenclature for those Forms of Life which cannot be at once arranged in a Natural System." The following resolutions were proposed by Mr. Bernard:—

(1) That the Linnean method of naming is well adapted for indicating affinity, and should be used for that purpose.

(2) That allied forms whose affinities are not clear should be designated by some provisional method of naming.

(3) That the method proposed by the author appears to promise enough to justify its temporary application to the Anthozoa.

A discussion followed, in which Messrs. A. O. Walker, H. J. Elwes, Clement Reid, H. Groves, Jeffery Bell, P. L. Sclater, Sir George King, W. M. Webb, and E. R. Sykes took part.

Mr. H. Groves moved as an amendment to the first resolution to omit all after the word "naming" and to substitute "is adequate for the present needs of zoology and botany." This was seconded by Dr. P. L. Sclater.

Before this was put to the meeting, Mr. H. W. Monckton raised a technical objection to a vote being taken at all on the merits of resolutions which were in effect a part of a paper submitted to the Society. He thought the taking of such a vote could neither be said to be authorised by the Charter or By-laws, nor sanctioned by the custom of the Society. He suggested that the matter be referred to the Council to consider the point.

The discussion was continued in order to elicit the views of those present on the resolutions proposed by Mr. Bernard, but no vote was taken.

WOOD GREEN AND DISTRICT HORTICULTURAL.

JUNE 11.—The monthly meeting was held in the Masonic Hall, Wood Green, on the above date, at which Mr. W. E. SHRIVELL, F.L.S., F.R.H.S., gave an interesting and instructive lecture on "Chemical Manures for Garden and Green-house," great interest being taken by the many members and friends who were present. A grand exhibition was held at the same time, at which Messrs. AMOS PERRY, Hardy Plant Farm, Winchmore Hill, staged an extensive collection of cut blooms, including several fine new Poppies, and many varieties of *Oncocyclus* Iris, I. Gatesii being especially fine. Mr. Perry also showed some fine *Hedysarum multijugum* and *Phlox ovata*. Messrs. STANLEY, ASHTON & Co., Orchid Growers, Southgate, N., also staged a magnificent collection of Orchids, among them being especially noticeable *Cattleya Mossiae*, *Odontoglossum citro-*

mum, and many varieties of *Oncidiums*, *Cypripediums*, and *Epidendrums*. The judges awarded both firms the Gold Medal of the Society. Mr. J. H. STICKLER, florist, of Wood Green, staged a very fine lot of the new Ivy *Pelargonium Gali ea*. Among the members who exhibited were Mr. R. CORE, gardener, with a collection of cut flowers; Mr. LE RICHE and Mr. W. E. PHILLIPS, both showing hanging baskets. Mr. GOULD won Mr. Phillips' prize for Roses, showing a magnificent collection, and he also exhibited a vase filled with flowers of *Buddleia globosa*.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

JUNE 6.—There was a fine display of Orchids at the meeting on this date, some excellent groups being staged, and many good plants were submitted to the Committee. The plant of the meeting was *Odontoglossum crispum* var. *Pittianum*, which, I dare to say, is the finest variety of *Odontoglossum crispum* known. It has been previously described in these pages.

FIRST-CLASS CERTIFICATES.

Odontoglossum crispum var. *Pittianum*, H. T. Pitt, Esq., London.

Odontoglossum Loochristiense var. *Lord Milner*, T. Baxter, Esq., Morecambe.

AWARDS OF MERIT.

Cypripedium × *Shillanum* var. *magnificum*, G. W. Law-Schofield, Esq., Rawtenstall.

Odontoglossum crispum var. *xanthotes*, H. H. Bolton, Esq., Newchurch.

Cattleya Mossiae var. *Shamrock II.*, Stanley, Ashton & Co., London.

Cattleya Skinneri, Temple's var., J. Leemann, Esq.

Batemannia Burti, T. Statler, Esq., Manchester.

Cattleya Mendeli var. *Edward VII.*, W. Bolton, Esq., Warrington.

Cattleya Mendeli Holtianum, W. Bolton, Esq., Warrington.

Cattleya Mendeli, Bolton's var., W. Bolton, Esq., Warrington.

CULTURAL CERTIFICATES.

Cypripedium callosum Sanderae (five flowers), G. W. Law-Schofield, Esq., Rawtenstall.

Odontoglossum crispum, Nisbett's var., the Hon. Mrs. Bass, Burton-on-Trent.

GOLD MEDAL.

Odontoglossum crispum var. *Pittianum*, H. T. Pitt, Esq.

SILVER GILT MEDAL.

For group of Orchids, J. Leemann, Esq.

SILVER MEDAL.

For group of Orchids, O. O. Wrigley, Esq.

BRONZE MEDAL.

For group of Orchids, T. Sander & Co.

For group of Orchids, T. Baxter, Esq.

VOICE OF THANKS.

For group of Orchids, W. Bolton, Esq.

For group of Orchids, John Cowan & Co., Ltd.

For group of Orchids, Hugh Low & Co. P. W.

NEW INVENTIONS.

THE IMPROVED ERINETTE SPRAYER.

THIS ingenious and practical little appliance consists of a strongly made copper receptacle into which clean water or insecticides may be pumped out of a pail or tub, and the pressure obtained is sufficient to empty the contents in the form of a fine spray, that by the hose-pipe and handle attachment is perfectly under command, and may be directed in any direction required. Like Paddy's celebrated gun, the new attachment enables one to shoot at green-fly or other pests "from round a corner," or from below, at any angle desired. We have used this convenient contrivance for some months, and find it a great convenience in damping or spraying delicate plants such as Orchids and Nepenthes, for cuttings, or cut flower arrangements, as this is possible without drenching or soaking them with superfluous moisture. In the application of fluid insecticides it is very economical, and soon saves its original cost, in fact its price of 25s. complete, may be looked upon as a good investment, rather than as an expenditure, as its initial cost is soon saved in the application of materials. Lady gardeners and amateurs will find it a great boon, and the best recommendation it can have is that professional gardeners of all kinds find it to be most useful. F. W. B.

FLORAL CHARM.

It is never an easy thing to define exactly what it is that appeals to our sense of beauty, whether in flowers or other things. Symmetry alone goes a long way, but may offend our finer instinctive taste by rigid formality; and colour, unless in some harmonious combination or association with its complementary tints, is insufficient to arouse anything like that admiration which would induce the exclamation "Charming!" To cultivated tastes, it is the delicate shades far more than pronounced tints which evoke admiration; but we must have superadded a delicacy of make in the petals, a symmetry in their arrangement, and a gracefulness of habit and carriage of the bloom or blooms to produce an unalloyed pleasure, and even these, as a rule, demand the deft association of harmonious foliage to complete a perfect picture. It is precisely this subtlety which baffles so many exhibitors at floral displays—the fact that a well-grown (i.e., naturally grown) plant is usually in entire accord with itself. That Nature has nicely balanced its proportions and harmonised its parts is too frequently lost sight of. If we watch the developments, we shall find every leaf and branch to be arranged in such a fashion that the maximum amount of light falls upon their surfaces; light is the main vital factor, and evolution has brought about the nicest conceivable relations between cause and effect. The main vital function is the production of seed through the flowers, and for these as a rule, conspicuousness is a necessity, so that the tiny eyes of the insect world may behold them, and thus enable that interaction between insect and plant to be brought about which ensures reproduction. This being so, the flowers however arranged, whether in scapes or panicles, or corymbs, or singly, are never bunched together higgledy-piggledy, but always in such a fashion that each individual has its due space and position. Now, it is precisely these balanced features which naturally please the eye, and in their alliance constitute the main charm of flowering or foliage plants, and it is precisely that exhibitor or arranger of floral decorations, from a button-hole to a drawing-room bouquet, who best appreciates these facts and treats his material accordingly, who is most successful in attaining charming effects.

On the other hand, it is precisely those who arrange bunched-up flowers, in which all individual grace is sacrificed to garish mass effects, who most render hideous what Nature has ordained to be beautiful. Viewed from this standpoint, what can be said for the typical mopheaded Chrysanthemum, or for Carnations with two or three blooms perched at the top of yard-long, attenuated plants, stiffened with prominent sticks? Compare these with any one of the natural species of Dianthus, with compact masses of spiky, glaucous foliage, dotted profusely with their characteristic flowers; and who can deny the palm of "floral charm" to these latter, however much we may admire the more highly-developed blossoms of the former? Surely the breeder who made up his mind could ally the now dissociated charms instead of sacrificing the native simplicity entirely.

The fact is that our selective cultivators confine themselves perhaps too strictly to interbreeding between their most developed types, and in this way lose more and more of the natural habits of the species worked upon, besides inducing a delicacy of constitution which often leads to destructive epidemics. It would, however, undoubtedly pay for the extra trouble and time involved if the native forms were occasionally resorted to as parents, crossing them with the best types, and thus originating new strains at once of robust constitution, and involving an alliance of the natural graceful habits with the better developed inflorescence. *Chas. T. Druery, F.L.S., V.M.H.*



METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Chiswick, London, for the period June 9 to June 15, 1901. Height above sea-level 24 feet.

1901.		DIRECTION OF WIND.	TEMPERATURE OF THE AIR.				TEMPERATURE OF THE SOIL AT 9 A.M.					
JUNE 9 TO JUNE 15.	At 9 A.M.		DAY.	NIGHT.	RAINFALL.	At 1-foot deep.	At 2-feet deep.	At 4-feet deep.	LOWEST TEMPERATURE ON GRASS.			
	Dry Bulb.									Wet Bulb.		
	deg.									deg.	deg.	deg.
SUN. 9	S.E.	69	8 55	3 79	8 42	7	...	62	7 59	3 54	9 33	0
MON. 10	N.E.	62	9 53	8 70	7 52	0	...	65	2 59	9 55	1 46	7
TUES. 11	W.N.W.	59	9 49	8 68	0 47	5	...	64	5 00	5 55	3 41	7
WED. 12	W.S.W.	50	9 50	0 65	0 48	8	0 11	63	5 60	5 55	5 44	7
THU. 13	W.S.W.	52	9 51	2 57	2 42	3	0 03	60	5 60	0 55	7 36	4
FRI. 14	N.N.E.	56	1 54	7 66	8 48	8	...	59	0 59	2 56	0 47	1
SAT. 15	N.W.	55	1 47	8 64	2 40	5	...	60	0 59	0 55	8 30	5
						Tot						
MEANS ...	...	58	2 51	8 67	4 46	1 0	14	62	2 59	8 55	5 40	0

Remarks.—The weather during the week has been mostly dull, with cold, strong wind, especially on the 13th.

GENERAL OBSERVATIONS.

The following summary record of the weather throughout the British Islands, for the week ending June 15, is furnished from the Meteorological Office:—

"The weather during this period was of rather an unsettled character. Rain was of frequent occurrence in Scotland, the N. of Ireland, and the N.W. of England. Elsewhere the rain was mostly confined to Wednesday and Thursday, the other days being generally fine and bright. Snow was experienced on the hills in many parts of Scotland on the 11th, and a thunderstorm was observed at Fort William.

"The temperature was high over England at the commencement of the week, but soon fell, and subsequently became very low for the time of year, so that the average for the week was as much as 4° or 5° below the mean over Ireland and Scotland, and from 2° to 4° over England. In the Channel Islands, however, the deficit was only 1°. The highest of the maxima, which were recorded on Sunday, ranged from 83° in the Midland Counties, and 81° in England, E. and S. to between 70° and 63° in Scotland, and to between 64° and 62° in Ireland. Later in the week the daily maxima were often below 60°. The lowest of the minima were registered on very irregular dates. They were as low as 35° in Scotland, N. and E. and in England, S.W., and between 37° and 39° in the English districts generally. In Ireland, the lowest reading was 40°, and in the Channel Islands, 47°.

"The rainfall was much more than the mean in Scotland, N., slightly more in Scotland, W., and just equal to the normal in Scotland, E., and England, N.W.: in all other districts there was again a deficiency, ranging from one-tenth of an inch in Scotland, W., and Ireland, N., to between three and five-tenths in the southern parts of our islands.

"The bright sunshine exceeded the mean except in Scotland, N., and over Ireland. The percentage of the possible duration ranged from 57 in the Channel Islands, 53 in England, S., 51 in England, S.W., and 50 in England, E., to 40 in Scotland, E., 28 in Scotland, N., and between 26 and 22 in Ireland."

THE WEATHER IN WEST HERTS.

Throughout the past week the temperature has remained continuously low for the time of year, both during the daytime and at night. On no day did the reading in shade exceed 64°, and on the coldest night the exposed thermometer fell to within 2° of the freezing-point. The ground temperatures have consequently fallen considerably, the reading at two feet deep being now of about average warmth, but at one foot deep about 2° colder than is seasonable. There occurred light showers of rain on several days, but the total for the week amounted to less than a quarter of an inch, and no rain-water at all has now come through the bare soil percolation gauge for nearly a fortnight. There was again a good record of sunshine, the average daily duration being about an hour a day in excess of the June average. The winds were, as a rule, rather high, and came mostly from some point between north and west, while the atmosphere was, on the whole, of about seasonable humidity. *E. M., Berkhamsted, June 18, 1901.*

MARKETS.

COVENT GARDEN, JUNE 20.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantums, p. doz.	5 0-7 0	Ferns, small, per	...
Arbor-vitas, var., doz.	6 0-8 0	100	4 2-6 0
Aspidistras, p. doz.	18 0-36 0	Ficus elastica, each	1 6-7 6
— specimen, each	5 0-10 6	Foliage plants, var.,	...
Cannas, per dozen	18 0 —	each	1 0-5 0
Crotons, per doz.	18 0-80 0	Lily of Valley, each	1 2-3 0
Cyclamen, per doz.	8 0-10 0	Lycopodiums, per	...
Dracenas, var., per	...	dozen	3 0-4 0
dozen	12 0-80 0	Marguerites, per	...
— viridis, per doz.	9 0-18 0	dozen	8 0-12 0
Ericas, var., per doz.	12 0-86 0	Myrtles, per dozen	6 0-9 0
Eunonymus, various,	...	Palms, various, ea.	1 0-15 0
per dozen	6 0-18 0	— specimens, each	21 0-68 0
Evergreens, var.,	...	Pelargoniums, scar-	...
per dozen	4 0-18 0	let, per dozen	6-12 0
Ferns, in variety,	...	— Ivy leaf, per doz.	8 0-10 0
per dozen	4 0-18 0	Spireas, per dozen	6-12 0

CUT FLOWERS, &c.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Asparagus "Fern,"	...	Lily of Valley, per	...
bunch	1 0-2 0	doz. bunches	6 0-12 0
Carnations, per doz.	...	Maidenhair Fern,	...
bunches	1 0-2 0	per doz. bunches	4 0-8 0
Oatleaves, per dozen	9 0-12 0	Mignonette, per doz.	...
Eschschias, per dozen	2 0-3 0	bunches	4 0-6 0
Gardenias, per doz.	0 6-1 6	Odontoglossums, per	...
Lilium Harrisii, per	...	dozen	2 6-6 0
dozen bunches	2 0-4 0	Roses, Tea, white,	...
Lilium lancifolium	...	per dozen	1 0-3 0
album, per dozen	...	— Catherine Mer-	...
bunches	1 6-3 0	mel, per dozen	2 0-4 0
Lilium rubrum, doz.	8 0-5 0	Smilax, per bunch	8 0-5 0
Lilium longiflorum,	...	Tuberose, per doz.	...
per dozen	2 0-4 0	bunches	0 4-0 6

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, Australian,	...	Grapes, New Ham-	...
(South), Vic.	...	burgh, p. lb., A.	2 6-3 0
torian, and Tas-	...	— B. ...	0 9-1 3
manian, case	3 0-12 0	— Belgian, black,	...
Apricots, per box	0 10-1 3	per lb.	0 9-1 0
Bananas, bunch	7 0-12 0	Lemons, case	10 0-27 6
— loose, per doz.	1 0-1 6	Lyches, new, pkt.	0 10 —
Cherries, per box	1 0-2 6	Melons, each	1 6-3 0
— per sieve	3 6-8 0	Nectarines, A. doz.	12 0-18 0
— English White	...	— B., per doz.	3 0-6 0
Heart, per sieve	3 0 —	Oranges, Murcia,	...
Figs, per dozen	4 0-8 0	case	18 0-40 0
Gooseberries, per	...	Peaches, A. dozen	15 0-21 0
sieve	1 3-1 9	— B., per doz.	4 0-8 0
Grapes, Muscats,	...	Pines, each	1 9-3 6
home - grown,	...	Sapucaia nuts, lb.	1 0 —
per lb., A.	4 0 —	Strawberries, A. lb.	0 3-1 6
— B.	1 0-1 6	— pecks	4 0-5 0
— Alicante, p. lb.	1 6-2 0	— Southampton, per	...
— Colmar, lb.	2 0-2 6	bucket	1 0-2 6

VEGETABLES.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe,	...	Onions, Egyptian,	...
per doz.	2 0-4 0	bags	4 0-4 6
Asparagus, home-	...	— new, bunches,	...
grown, bundle	1 6-5 0	per doz.	2 0 —
Beans, Chnll. Islds.	...	Parsley, 12 bunches	1 6-2 0
and home, dwf.,	...	Peas, Blue, bushel	3 6-5 6
new, per lb.	0 6 —	— bushel	3 0-5 0
— Broad, English,	...	— bags	7 0-7 6
in sieves	2 6 —	Potatoes, per ton	70 0-130 0
Beetroots, bushel	1 0-2 0	— New, per cwt.	10 0 —
Beet, per dozen	0 6 —	— Lisbon, per box	3 6 —
Cabbage, tally	2 0-3 6	— Channel Islds.,	...
— dozen	0 6-1 0	per cwt.	17 6-8 0
Carrots, 12 bunches	1 6 —	Radishes, per 12	...
— new	4 0 —	bunches	1 6 —
Cauliflowers, p. doz.	2 6-3 0	Salad, small, pun-	...
Cress, per dozen	1 6 —	nets, per dozen	1 3 —
punnets	2 0-3 0	Shallots, per doz.	...
Cucumbers, doz.	1 6 —	bunches	1 6 —
Eradie, new French,	...	— per lb.	0 4 —
per dozen	1 6 —	Spinach, English,	...
Garlic, lb.	0 3 —	bushel	2 0-3 0
Horseradish, fo-	...	Tomatoes, English,	...
reign, p. bunch	0 9-1 0	per 12 lb.	4 6-6 0
Leeks, doz. bunches	0 9-1 0	— Channel Islds.,	...
Lettuces, Cabbage,	...	per lb.	0 4-0 5
per bushel	1 6 —	Turnips, new, per	...
— Cos, per doz.	1 0 —	doz. bunches	6 0-8 0
Mint, per dozen	2 0-3 0	Vegetable-Marrows	...
bunches	2 0-3 0	doz.	6 0 —
Mushrooms, house,	...	Watercress, p. doz.	...
per lb.	0 8-0 10	bunches	0 6 —

POTATOS.

Old, various sorts. 80s. to 130s. per ton; St. Malo, Cherbourg, Jersey, 7s. to 8s.; Lisbons, per box, 3s. 6d. John Bath, 32 & 34, Wellington Street, Covent Garden.

REMARKS.—English White-Heart Cherries now coming in sieves of 24 lb., which sell at 3s. The others above quoted are foreign, and some are very good. Bombay Mangoes fetch per dozen 3s. to 4s. Strawberries are now coming in fast, the principal variety being Royal Sovereign. Asparagus is now nearly over for the year.

FRUIT AND VEGETABLES.

GLASGOW: June 19.—The following are the averages of the prices recorded since our last report:—Grapes, 2s. to 3s. per lb.; Mushrooms, 1s. to 1s. 3d. do.; Cherries, 4d. to 8d. do.; boxes, 1s. to 2s.; Strawberries, Cornwall, 4s. to 7s. per dozen punnets; do., Southampton, 2s. 6d. to 3s. 6d. per handled basket; Oranges, 10s. to 15s. per case; large and extra large, 15s. to 18s. do.; Lemons, 7s. to 10s. per case; Bananas, special bunches, 10s. to 14s. each; mediums, 9s. to 11s. do.; Green Gooseberries, 2s. 6d. per half bushel; in bulk, 4s. to 47 per ton; Onions, Egyptian, 4s. 6d. to 5s. 0d. per cwt.; Dutch Carrots, 11s. 3d. to 13s. 6d. per hamper; Turnips, 2s. do.; Cauliflowers, 2s. 6d. per dozen.

LIVERPOOL: June 20. — Wholesale Vegetable Market.—Potatoes, per cwt.: Bruce, 3s. 6d. to 4s. 2d.; Main Crop, 3s. 6d. to 4s. 6d.; Early Regent, 7s. to 7s. 6d.; Jersey, 7s. to 7s. 6d.; Turnips, 8d. to 10d. per dozen bunches; Carrots, 10d. to 1s. do.; Onions, foreign, 3s. to 3s. 9d. per cwt.; Parsley, 6d. to 8d. per dozen bunches; Lettuces, 6d. to 8d. per dozen; Cucumbers, 1s. 3d. to 2s. 6d. do.; Cabbages, 4d. to 6d. do. *St. John's*: Potatoes, 1s. 2d. per peck; do., new, 1d. to 1½d. per lb.; Grapes, English, 2s. 6d. to 3s. 6d. per lb.; Pines, English, 4s. each; Apples, 4d. to 5d. per lb.; Tomatoes, 6d. to 8d. do.; Strawberries, 6d. to 10d. do.; Gooseberries, 3d. per quart; Peas, 1s. 6d. per peck; Cherries, 6d. per lb.; Apricots, 1s. per dozen; Asparagus, 1s. 9d. to 2s. 6d. per bundle; Cucumbers, 4d. each; Mushrooms, 1s. 2d. per lb. *Birkenhead*: Potatoes, 1s. to 1s. 2d. per peck; new, 1d. to 8d. per lb.; Peas, 1s. to 1s. 6d. per peck; Cucumbers, 2d. to 4d. each; Cherries, 6d. to 8d. per lb.; Strawberries, 6d. to 1s. do.; Apricots, 1s. per dozen; Gooseberries, 1½d. to 2d. per lb.; Grapes, English, 1s. 6d. to 3s. 6d. do.; Mushrooms, 1s. to 1s. 6d. do.

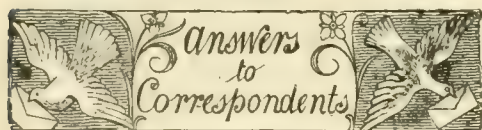
CORN.

AVERAGE PRICES OF British Corn (per imperial qr.), for the week ending June 15, and for the corresponding period of 1900, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1900.		1901.		Difference.
	s.	d.	s.	d.	
Wheat	25	6	27	8	+ 2 2
Barley	23	8	24	0	+ 0 4
Oats	18	11	19	7	+ 0 8

TRADE NOTICE.

WE note that Mr. Herbert Wm. Rendell, who has been established for six years at 90, Queen Street, Cheapside, and has made a special feature during that period of horticultural valuing, auctioneering, and agency, has opened a new sale room, chiefly for the disposal of horticultural produce, at 36, Bucklersbury; and 7, Poultry (one minute from the Bank of England). His first sale will be held on July 2.



A "PINK" RAISED FROM A CHANCE SEEDLING OF A CARNATION: D. K. L. When the very mixed parentage of Carnations, Sweet Williams, and Pinks of various denominations is considered, a reversion in any one of them is not a surprising matter. No other order has afforded the hybridist so much material for experiment as Caryophyllaceæ.

APPLE AND PEAR LEAVES: A. K. These look as if they had been injured by cold winds or frost during growth.

APPLES: J. Wilson. The injury is caused by the Apple-moth, *Anthonomus pomorum*. Nothing can be done now excepting to collect all fallen fruits and burn them; but early in the spring before the flowers expand, and after they have dropped, the trees should be dressed with Paris Green, a remedy for all gnawing insects on fruit-trees. Use fine-grained powder of Paris Green (poison) 1 lb., lime in equal bulk, and 200 gallons of water. The action of the lime is to overcome the caustic action of the Paris Green, which is apt to injure the foliage of Apples and Plums, if applied without it. The mixture must be kept stirred whilst the trees are being sprayed with it.

BOOKS: Reader. A work entitled *Select Ferns and Lycopods* is published by Messrs. B. S. Williams

& Son, Paradise and Victoria Nurseries, Hollo-way. We know of no work in the English language dealing solely with the propagation of plants.—F. C. Wadmore. The only volume we can think of that gives the desired information is the *Report of the Rose Conference of the Royal Horticultural Society*. Apply to the Secretary, at the offices of the Society, 117, Victoria Street, Westminster.

BOTANICAL SPECIMENS: Botany. The best method of drying is between sheets of absorbent paper under pressure, changing the paper frequently, till the moisture in the plant is taken up. The paper can be obtained of Messrs. West, Newman & Co. They would doubtless supply you with other requisites, or inform you whence obtainable.

BOTTLING GOOSEBERRIES AND CURRANTS: Constant Reader. Put dry fruit into clean wide-mouthed bottles, fill up with spring water, add two table-spoonfuls of white sugar, put the corks in lightly and set in a bain marie or a washing copper up to the necks, putting straw or hay between the bottles, bring the water to the boil, and let it boil for half an hour. When the fire goes out, insert the corks firmly, and allow the bottles to remain in the water till cold. Seal the corks securely, and turn the bottles necks downwards in a box, which bury in a cool place out of doors, or set the bottles in a cool place.

GRAPES: H. C. Your Grapes are affected with spot—a fungus. It is too late now to do much, but you might try syringing with liver-of-sulphur, ½ oz. to a gallon of water.

GRAPES: Sigma. The berries are badly rusted from some cause, such as draughts of cold air reaching the bunches when these were warm and moist, flowers-of-sulphur applied to the hot-water-pipes when these were excessively hot, hot steam from the pipes impinging on the berries, &c.

HOLLY LEAVES: A. K. They are attacked by the grub of a fly named *Phytomyza ilicis*, which has nothing to do with the mischief to the Apples.

HORTICULTURAL HALL: R., and others. The subject is not forgotten. On the contrary, steps are being taken in the direction you desire; and when the matter is ripe for discussion we shall have more to say.

INCOME TAX: Florist. This is levied on income, not on buildings, unless as rent received for such as are in the occupation of others. The borough authorities will tax you for buildings used in trade. The result of the appeal made to the House of Lords (see *Gardeners' Chronicle*, August 12, 1899) is that market gardens under glass are in future not rated as agricultural land, paying only half the rate demanded from land with "buildings" on it, but are to be assessed on the same scale as lands on which immovable buildings are erected.

IRIS LEAVES INJURED: C. B. G. The injuries to the leaves are caused by some insect.

LELIA PURPURATA: D. J. The appearances are due to the union of two or three flowers, with certain parts squeezed out.

LIQUID-MANURE IMPARTING FLAVOUR TO FRUIT: J. B. We should not, unless in exceptional cases, believe this to be a fact, unless the fruit got touched by the liquid.

MILDEW ON VINES: W. M. See our issue for May 25 this year, p. 340. The remedy has often been given in these pages.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—S. Wright. *Kerria japonica*, double fl.—G. H. S. 1, *Syringa emodi*; 2, *Prunus serotina*; 3, *Pyrus intermedia* (P. scandica); 4, *Pyrus vestita*; 5, *Pyrus Aria* (White-beam tree).—D. S. D. *Spiraea confusa*.—F. J. R. 1, *Lithospermum prostratum*; 2, *Phlox subulata* var.; 3, an *Oxalis*; 4, *Philadelphus coronarius*; 5, *Spiraea callosa*; 6, *Manettia bicolor*.—A. C. T. *Quercus glabra*, see our figure in *Gardeners' Chronicle*, September 29, 1894.—Insignis. 1, Young shoot of *Abies cephalonica*; 2, *Ceratonja siliqua*; 3, apparently the young shoot of a *Cedrus*; 4, *Olearia macrodonta*; 5, *Ilex crenata*; 6, *Raphiolepis ovata*.—J. C. 1, Send to some Rose grower; 2, *Leucothoe axillaris*; 3, *Hyacinthus comosus monstrosus*; 4, *Scilla peruviana*.—W. A. C. *Melilotus officinalis*, indigenous in Southern England.—J. H. *Oncidium flexuosum*.—G. G. A very fine variety of

Cattleya Mossiae.—*Herbaceous* sends twelve specimens instead of six. 1, *Campanula alliariifolia*; 2, *Phlox fruticosa*; 3, *Erigeron speciosus*; 5, *Trollius europæus*; 6, *Barbarea vulgaris*, double fl.; 8, *Lychnis viscaria*, double var.; 9, *Campanula trachelium*; 10, *Rhododendron ferrugineum*, Switzerland; 11 and 12, *Iris sibirica*.—Jas. M. Foster. The better materials you send enable us to say that it is *Quercus Phellos*, and not that which we conjecturally gave as the name in our previous issue. The other plant is *Magnolia acuminata*.—J. S. W. 2, *Olearia Gunniana*; 3, *Spiraea callosa*; 4, *Myrica Gale*; others next week.—E. M. G. Probably a *Phacelia*, scrap too poor for identification.

PANSY: E. B. Union of two flower-stalks.

PEAR: H. W. S. The Codling Moth, *Carpocapsa pomonella*.

PEARS: P. M. T. Grub, probably of *Carpocapsa pomonella*.

ROSE LEAVES CURLING: J. McC. Cold winds, probably. Some species and varieties are liable to these malformations.—J. F. Curling of the leaves seems common this year, probably from cold winds; we see no green-fly.

ROYAL HORTICULTURAL SOCIETY: J. L. Apply to the Secretary, 117, Victoria Street, Westminster, S.W.

ROSES: W. M. We cannot undertake to name Roses. Send them to some nurseryman who makes a specialty of them.

SAXIFRAGA: Dr. Ramsay. In our last issue we unfortunately spelt the name Ramsey, and hasten to correct the error. The plant was named in compliment to Dr. Ramsay, of Torquay, whose garden has often been the subject of illustration in these pages.

SEED TAKEN FROM OUT OF A QUANTITY OF GROCER'S CURRANTS: J. H. If the plant should produce flowers, send again.

COMMUNICATIONS RECEIVED.—S. W. F.—C. W. D.—L. Behmer & Co., Yokohama—P. MacMahon, Brisbane—C. G. Van T., Haarlem—M. M. Geneva.—A. S. Cole—F. J. R.—J. C.—Messrs. Barr & Sons—W. M.—R. M.—W. G.—H. T. M.—E. G. A. Chandler—W. A. C.—E. J.—G. B. M.—C. T. D.—D. R.—A. W.—A. C. F.—Fisher, Son, and Sibray, with thanks.—A. D.—N. E. D., Sweden.—P. Mouillefert, Paris.—W. W.—M. J. G. S. Selborne, with thanks.—W.—H. F.—W. G. S.—M. Buysmann—S. A.—R. L.—A. Cogniaux—P. M., Brisbane.

MARRIAGE.—Mr. R. C. NOTCUTT, of the Broughton Road Nursery, Ipswich, on Wednesday, June 12, at St. Mary Stoke Church, Ipswich, to Miss MAUDE HETTY SMITH-FIELDING.

Continued Increase in the Circulation of the "GARDENERS' CHRONICLE."

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

TREBLED.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, and ALL CLASSES of GARDENERS and GARDEN-LOVERS at home, that it has a specially large FOREIGN and COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.

GARDENING APPOINTMENTS.

MR. JAMES LAWIE, for the last three years Head Gardener at Woodbrooke, as Head Gardener to Sir JAMES DE HOUGHTON, Bart., at Houghton Tower, Preston, Lancashire, and entered on his duties on June 13.

MR. J. KEELEY, for the past seven and a half years with J. BACKHOUSE & SON, LTD., York, as Assistant-Secretary to CURTIS, SANFORD & CO., LTD., The Devon Rosery, Torquay, and has entered upon his duties.

MR. H. FRY, previously Foreman in the gardens, Ashlyns Hall, Berkhamsted, and at Bishop's Hall, Romford, as Head Gardener to E. D. L. HARVEY, Esq., Bessingwood, Horsham, Sussex.

MR. R. KNIGHTS, last four years Gardener and Bailiff to W. J. COMPTON, Esq., Coombe House, Kingston-on-Thames, as Head Gardener to F. H. BAXENDALE, Esq., Framfield Place, Sussex.

MR. J. WARD, for the past three years as Foreman in the gardens at Elmhurst Hall, Lichfield, as Head Gardener to M. HAMER, Esq., at the same place.

MR. W. PARKER, for the past four years Foreman at Rufford Abbey Gardens, as Head Gardener to Miss HELYAR, Coker Court, Yeovil.

MR. J. CASWELL, for the past three years Gardener at Scarletts Park, Twyford, Berks, as Gardener to G. WILLIAMS, Esq., Piggotts Manor, Elstree, Herts.

CATALOGUE RECEIVED.

V. N. GAUNTLETT & CO., Japanese Nurseries, Redruth.—Hardy Plants for Lake and Woodland sides, Aquatics, Climbers, &c.



THE

Gardeners' Chronicle

No. 757.—SATURDAY, JUNE 29, 1901.

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ENYS.

THIS is the residence of Mr. F. G. Enys, situated about three miles from the town of Penryn, that lies at the head of Falmouth harbour, of which a fine view is obtained on the drive from the lodge to the house, is the home of many interesting and beautiful plants and trees. An epigrammatist, being once struck by the size attained by flowering shrubs in Cornwall, and by the diminutive stature of the trees in the higher levels of the county, remarked that its shrubs were trees, and its trees shrubs. Though the first half of this witticism undoubtedly holds good, the latter part is at once disproved by a visit to Enys, where many trees of goodly dimensions are growing. A symmetrically proportioned Beech standing on sloping ground has a girth of 18 feet; Scotch Firs, which tradition has it were planted in the reign of James I., have a circumference of over 9 feet; Silver Fir of 12 feet, Sequoia of 11 feet, and Spanish Chestnut of the same dimensions; while there are fine specimens of Larches, Planes, and Lucombe Oak, said to have been raised on the estate; the Canoe Birch, Hickory, over 50 feet in height; Cupressus macrocarpa, 15 feet in girth, and 80 feet high; Taxodium distichum, 50 feet high; a tall Ginkgo or Maidenhair tree (Salisburia adiantifolia), 40 feet in height, and 4 feet in girth; English Yews over 50 feet high, but not spreading in the lower branches as is the general habit of Yews and Tulip-trees.

One of the New Zealand Beeches (Fagus cliffortioides), which from its minute leafage is, in common with other species from the same islands, generally termed Birch in its native habitat, is making good growth. This tree, though evergreen in its own country, has proved deciduous when established in the south-west of England. Pittosporum tenuifolium, also from New Zealand, has attained a height of 25 feet; and a Leptospermum from the same country has formed a large bush, freely studded with its small white flowers in the spring of the year. Rhododendrons, Camellias, and large bushes of Azalea indica, form a feature at Enys. Of the former, there are many choice Himalayan species and varieties; R. arboreum commences to expand its blossoms as early as October or November, followed shortly after by R. Noble-anum; while other species lengthen the blooming period until the late spring; Rhododendron cinnabarinum, raised from seed received from India, has grown into a large bush, and flowers at Christmas; while R. triflorum, from Sikkim, also deserves notice. Camellias grow with a luxuriance unknown further eastward, and form huge shrubs in the open ground 10 feet and more in height. Their beauty is much enhanced by the pendulous habit assumed by their outer shoots, doubtless induced by the weight of blossoms that they bear, as many as sixteen flowers having been counted on one small spray. They commence to flower in November, and continue to blossom as late as June; the space around the bushes being tinted with fallen petals for many a month. One of the loveliest of the Camellias is Duchess of Northumberland, the blossoms of which are of a delightful shell-pink tint.

Of shrubs, flowering and otherwise, there are many notable examples. Two immense specimens of Photinia serrulata are fully 30 ft. in height and very bushy; and are, in all probability, as fine examples as are to be found in the south-west. Aucubas are more finely berried than any I have met with, the berries being exceptionally large, and produced in such numerous clusters as to appreciably colour the great bushes at some distance; one bunch consisted of thirty-six berries. The Himalayan Aucuba, with perfectly round berries, was also represented. An immense Laurel that has been allowed to assume its natural habit of growth is covered with the clambering trails of an old plant of Clematis vitalba, with a stem 2 feet in circumference; and at one side of the drive leading down to the house is a great bush of Erica mediterranea, 6 feet in height and 8 feet in diameter.

In the flower-garden is a standard Wistaria that owes its present form to having been trained over a trellis in the earlier stages of its growth; while a fine Loquat, 12 feet high, flowers freely in the open. Grevillea rosmarinifolia has formed a spreading bush about 6 feet in height, and in the spring is bright with its rosy-carmine flowers; while Escallonia montevidensis, whose fragrant white bloom clusters are haunted by butterflies in the autumnal months, has attained a height of 15 feet. Magnolia Lenzii bears its purple-stained flowers in the spring, often supplementing these by a second autumnal display; and the double-flowered variety of Magnolia stellata, Amelanchier canadensis, Chimonanthus fragrans, Daphnes, Kalmias, and Cordylines in variety, as well as many other attractive shrubs, are also in evidence. Cornus (Benthamia) fragifera is largely grown, one well-shaped specimen standing in an isolated position on the grass, backed by tall deciduous trees, presenting a lovely

sight in June, when smothered in its large flowers of palest yellow. The climbing Hydrangea is also grown, and on a wall Physianthus albens flowers and fruits. Erythrina crista galli grows vigorously in the open, and produces its great crimson-flowered spires in profusion; while among many other interesting plants the New Zealand Forget-me-Not (Myosotidium nobile) chiefly evokes the wonder and admiration of flower-lovers. The seeds of this were brought from its natural habitat in Chatham Island by Mr. John D. Enys, to whom the introduction of the numerous representatives of New Zealand that adorn the gardens is due. In Chatham Island the Myosotidium grows on the sea-beach, just above high-water mark, in the sand of the shore, and near enough to the waves to receive the full benefit of the wind-swept spray. In the house a painting shows the Myosotidium growing on its native beach, while the representation of a single flower-head gives evidence that these are more pyramidal in form in the plant's wild state than they prove in this country.

I am informed by Mr. John Enys that the Myosotidium is becoming exterminated in its only home by cattle and other agencies. At Enys the fine colony of Myosotidium, which evinces the most vigorous health, grows beneath a southern wall. Flower-spikes are thrown up in quantity, sometimes reaching a height of over 3 feet, while the large spreading leaves, with their highly-polished surfaces, are noble and commanding in form. Both the blue and white-flowered varieties are present, and self-sown seedlings appear in large numbers in and about the bed. The plants are growing in porous soil, surfaced with a heavy mulch of sea-sand, and are apparently suited to perfection, both in the matter of soil and site. The lakelets at the foot of a densely-wooded hill present an exceedingly attractive picture. In the late spring a Lime-shaded path, bordering the water for over 100 yards, is edged with a broad band of the rose-coloured Primula japonica, the crowns of some of the plants being level with the water, while numerous self-sown seedlings have sprung up on the verge of the path. When in full bloom, the countless glowing flower-heads, with their rosy reflection mirrored on the dark water, have a delightful effect. On an island in the larger lakelet, and at the water-side, beneath the sheltering trees, grow two magnificent clumps of Gunnera manicata, some of the leaves of which are over 9 feet in diameter (see Supplementary Illustration to the present issue). Great Osmundas line one end of the lakelet, on whose still surface the Water Lilies float, and white Arum-spathes are imaged; and on the banks Fuchsia trees 12 feet high, and 15 feet through; Benthamias, Bamboos, Cryptomerias, and Tulip trees flourish. S. W. F.

THE TREE LOBELIAS OF TROPICAL AFRICA.

WE are so accustomed to look on Lobelias as annuals, or at most as perennials, that it comes as a surprise to many to hear of tree-Lobelias; nevertheless, various arboreous species of the genus Lobelia (fig. 156) constitute one of the most striking features in the vegetation of the open parts of some of the loftiest mountains of tropical Africa, where they grow at elevations of 6,500 to 14,000 feet. In habit they resemble a Cordyline or small Palm, having an unbranched stem, with a crown of undivided, pendulous leaves, finally surmounted by a terminal, erect inflorescence several feet in

length. Though apparently of several years' duration, they apparently flower only once, and then die. The first known were discovered in Abyssinia by Quartin Dillon and Schimper, whose collections were published in part, at least, in Richard's *Flore de l'Abyssinie*; and on account of their peculiar habit of growth, they were regarded as the type of a new genus, which was called *Rhynchoptalum*. But most botanists are now agreed that it is better to treat them as a section of the genus *Lobelia*, which comprises species of the most diverse habit and stature. There is another group of species of similar habit inhabiting the mountains of tropical America, to which the name of *Tupa* was given, but this also has been reduced to *Lobelia*.

Two species, at least, of these arboreal

are believed to protect the inhabitants from all evil influences, and more especially from the attacks of the devil himself.

L. Rhynchoptalum grows from 15 to 20 feet high, and like most of the species of this group, has blue flowers. It is in cultivation at Kew.

L. Deckenii, Hemsley, and *L. Volkensii*, Hemsley, inhabit Kilimanjaro, between 10,000 and 14,000 feet, and Sir Harry Johnston, Dr. Volkens, and other travellers give illustrations in their books, showing the effects of these plants in the landscape.

L. squarrosa, Baker f., is a native of Nyassaland, where it was collected at an elevation between 6,500 and 7,500 feet.

All the foregoing, it will be seen, are from the eastern half of the continent; but some

height. When this has ripened, numbers of birds may be seen plucking the seed out, and the tree gradually decays and dies, seedlings soon springing up round the place. If the stem or leaves are cut, a thick white sticky fluid exudes. It is almost useless for fuel, as when dry only a thin bark and a little fibre remain. Trees in every state of growth may be seen at all seasons surrounded by the short coarse grass of the mountain side. For three months from the middle of July the ground is covered with snow, sometimes to a depth of a couple of feet. *P. H. E. Powell-Cotton.*

NEW OR NOTEWORTHY PLANTS.

CATTELEYA × *GLORIOSA* (HYB. NOV.).

M. A. A. PEETERS, nurseryman, of Saint-Gilles, near Brussels, has lately sent us a flower of this splendid hybrid, which he obtained by fertilising



FIG. 156.—TREE LOBELIAS OF ABYSSINIA. (SEE P. 417.)

(Enlarged from a photograph by Captain Powell-Cotton.)

Lobelia inhabit Abyssinia, where they bear the name of giberroa or gibbara. They are *L. gibberroa*, Hemsl., and *L. Rhynchoptalum*, Hemsl., growing in various localities at elevations of 8,000 to 13,000 feet. Quartin Dillon designates the latter as one of the most singular plants of the whole of Abyssinia, and as one of those concerning which the inhabitants hold the most diverse opinions and traditions. There is no doubt that the juice is poisonous, but the natives go so far as to assert that the poisonous properties of the plant are so powerful as to cause the death of a person so unfortunate as to fall asleep within its shadow. Various medicinal properties are ascribed to the seeds, especially in relation to parturition; and the long spikes of flowers placed on either side of the door of a dwelling

forty years ago Mr. G. Mann discovered *L. columnaris*, Hook. f., in the Cameroons, on the western side. *W. Botting Hemsley.*

In my journey through Abyssinia from south to north, I only saw this tree growing in the high mountain district of Simien, to the N.E. of Lake Tana, through which country, I believe, the naturalist Rüppel, in 1835, was the last European traveller. The elevation, according to the French maps, is about 4000 metres. The native name is Gibarrar, and they say it and the Ibex are found here and nowhere else; they attribute the effect of the high altitude on strangers to this tree, which they maintain gives all those who see it for the first time a headache! It has the appearance of a dwarf Palm, with the stem 4 to 6 feet high, crowned by a bunch of leaves, from the centre of which the seed cone grows in a long spike sometimes 5 feet in

Cattleya Warneri with *C. Schilleriana*, and which has just flowered with him for the first time.

The flower measures from about 6 to over 7 inches in diameter, vertically and across; sepals and petals spreading, bright purplish-rose, the edges very slightly wavy; sepals ligulate, petals broadly oblong, spatulate; lip wide, about 3 inches long by 2½ inches across, in form widely elliptic and rounded, deeply trilobed, with a sinus between the very narrow lobes, the lower part a rosy-white, tinged and veined with yellow; lateral lobes triangular, obtuse, ascending, and surrounding the column bright rose verging into crimson towards the top; terminal lobe very broad, reniform, rounded, deeply notched at the top, the edges denticulate and strongly crumpled, bright purplish-crimson, with numerous darker veins, and two yellow spots at the base. Column elongated, slightly pinkish-white.

The general appearance of the flower in size

form, and shape much resembles that of *C. Warneri*, but the deeply trilobed lip recalls that of *C. Schilleriana*. The seed was sown on April 12, 1896, and the first flowers appeared at the end of May, 1901. *A. Cogniaux*.

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM HARRYANUM.

In a recent issue I noticed, in the "Orchid Notes" for the week, that to grow *Odontoglossum Harryanum* well it should be potted every year. Two years ago, about a score of this fine *Odontoglossum* in a very healthy condition came under my notice, full of vigour, and flowering wonderfully every year. These plants had not been potted for at least six years, and even continental growers who saw the plants said that they had never seen finer. The most remarkable thing about them was, that they grew on a shelf in a glass potting-shed, with a higher temperature than is usually afforded *Odontoglossums* all the year round. I should like to know if other growers find that this variety grows better undisturbed. *G. G. W.*

LÆLIO CATTLEYA × DIDO (L. CINNABARINA × C. SKINNERI).

A new and very singular-looking hybrid, though not one likely to take high rank as a florist's flower, was exhibited by the Hon. Walter Rothschild under the above name.

The habit of the plant is similar to that of *L.-C. × Hippolyta* and other of the *Lælia cinnabarina* crosses. The inflorescence bears several flowers, which may be likened to a narrow-petalled form of *Cattleya Skinneri*, the narrow labellum being also folded over the column, as in that species. The flowers are pale rosy-lilac colour, tinged with yellow; lip similar in colour to the other segments, but having on the front portion rose-purple veining. *Cattleya Skinneri* is not a very good species for the hybridist, but the few which have been raised from it have improved greatly when grown well.

MILTONIA VEXILLARIA VAR.

A remarkable form of *Miltonia vexillaria* is sent by J. T. Holmes, Esq., Beechen Cliff, Bath. The flower is large and well-formed, but the chief peculiarity lies in the singular and attractive arrangement of the colours. The sepals and petals are of a bright purplish rose, each segment having a distinct white margin. The base of the lip is of a yellow tint, with some well-defined lines of a purple tint radiating from the yellow base to the centre of the lip, and lines of purple spots on a white ground on each side. The frontal half of the lip is rose-coloured, and has an irregular white margin, and inside the margin on the rose-coloured ground are some white spots with a purple dot in the centre. The bases of the lateral sepals also have a purple line on a white ground.

CULTURAL MEMORANDA.

MULCHING FLOWER BEDS.

The advantages accruing to all kinds of plants that are bedded-out for the summer months when mulched is always apparent, and the time bestowed upon the work is amply repaid by a greater wealth of flowers, and increased vigour in the plants generally; they are thus able to bear a spell of hot and dry weather without drawbacks. Certain plants derive greater benefit from mulching than do others; for instance the *Calceolarias* make a more stocky growth, and flower more freely when the soil is kept in a constantly cool moist state. I apply a mulch of decayed Mushroom-bed materials to all beds of *Calceolarias*, of which we grow about 1,500 plants, the mulch being applied as soon as the planting is finished, and very few plants die. If gardeners, especially those who have to deal with light soils would mulch, they would have no reason to discard

Calceolarias. *C. amplexicaulis* attains four feet in height here, and flowers profusely. Among subjects that may be mulched with much benefit are *Violas*, tuberous-rooted *Begonias*, and *Fuchsias*. In large gardens it may not always be possible to do much mulching, garden hands being few, or the material insufficient; it is well, however, to give it to those plants that are known to derive the most benefit from a mulch. Coconut-fibre refuse is another very good material, but it does not equal the Mushroom-bed manure owing to its lack of manurial properties.

The plan of carpeting the soil beneath the taller bedding-plants, much in vogue in some gardens, is also of assistance in keeping the surface soil cool and moist, but the roots of these carpet-plants take out much moisture from the soil, and are not so good as a mulch. *H. T. Martin, Stoneleigh Abbey Gardens.*

ROSE PROPAGATION.

In the month of July, the following varieties of the Rose may be struck from cuttings of half-

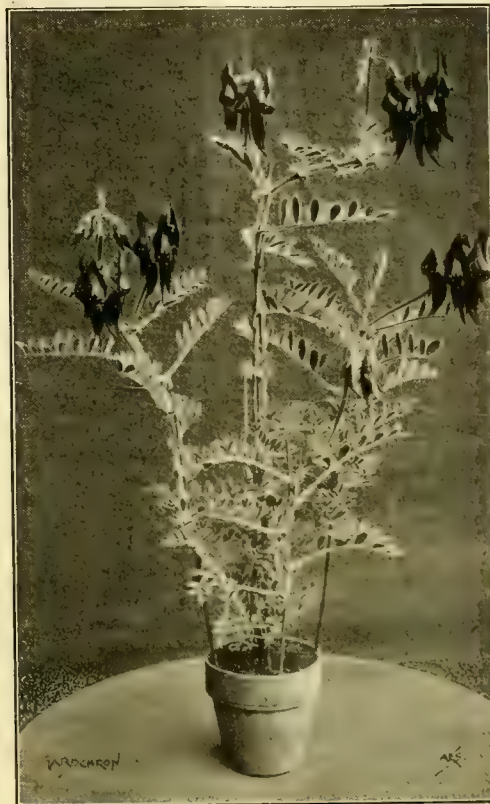


FIG. 157.—CLIANTHUS DAMIERI GRAFTED UPON COLUTEA ARBORESCENS.

ripened shoots taken off with a thin heel, in a mild hot-bed of tree-leaves, made in a sunny aspect. Having made the bed, and allowed the rank heat to subside to about 80°, make the interior level and smooth, and place a layer of finely-sifted coal-ashes all over it, which pat smooth and level with a spade. Collect shoots of China, Noisette, and Fairy Roses, Penzance and Scotch Briars, and the like, tying them in labelled bundles, and throwing them into large watering-cans with water in them, so as to keep the cuttings fresh. Take off a few of the lower leaves, reduce the number of leaflets on those that are left, and make the heel with a smooth surface. Having large 60's filled with sandy loam pressed firmly, insert one cutting in each about an inch deep, make it firm in the soil, scatter some silver-sand on the surface, and when a few score pots are finished, afford water to thoroughly moisten the soil; let them stand for half-an-hour, then place them in the frame close together, and shade with a mat, keeping the frame close, and so on till all of the cuttings are made and put into the frame. Afford air for 15 minutes in the early

morning to dissipate moisture. In a month, or less, all will be rooted, and air may be afforded by degrees till the plants will bear full exposure without flagging. It may be necessary to afford water before rooting is completed, and this should be carried out with a water-can having a spreading rose. If it be found that the foliage is dry in the morning, sprinkle or syringe the cuttings; also afford a sprinkle late in the afternoon if the day has been bright and hot. Do not open the frame more than is necessary for inspection. Short lateral shoots that have not carried flowers or flower-buds make the best cuttings. These Roses may be kept over the winter in pots plunged in coal-ashes, or they may be planted in nurse-beds, there to remain for a year or two; or they may be repotted in November or in early spring, and grown on in pots. *M.*

GRAFTED ROSES TO FLOWER NEXT SPRING.

A correspondent, "D. K. L., Cheltenham," enquires how he may obtain Roses from grafted plants in the spring. The only method by which he can succeed is to get in wild Briars (*Dog Roses*) as soon as the leaf falls, and pot them in 7 and 8-inch pots, using turfy loam in the potting, and potting firmly. Late in December, place these Briars, which may be of any desired height if they be but fairly well rooted, in a house having a temperature not exceeding 60°; and on the first signs of growth in them, rind or whip-graft them with well-ripened shoots of Tea, Hybrid Tea, and Hybrid Perpetuals, 4 to 6 inches in length, binding them firmly but not too tightly in place, and covering the point of contact with grafting wax applied warm. This operation should be finished off in the first week in January. Keep the stocks moist, and apply water at the root when it is needed. As soon as it is seen that growth in the scion is being made, remove the plant to a less warm place, and so proceed till all have been removed. The plants may be hastened in an intermediate-house, or they may be kept in the ordinary greenhouse. After a graft has taken, remove all other shoots from the stem.

Such grafted Roses will afford a few nice blooms, four to six per plant in March, April, and May. In the summer months they may be kept in pots, and be repotted in November, or planted out. No more flowers should be allowed than those that come in the spring, or but little growth will be made the first year, and weak shoots should be removed.

The Dog Rose or Briar makes good stocks for dwarf Roses when two and three years old, from seed or from cuttings. The haws must be gathered in the late autumn, and the seeds extracted and stratified in sandy soil under a garden frame, where they must remain till April, at which time they may be sown thinly in drills drawn ½-inch deep and 6 inches apart. Most of them will come up the first year. The plants should be transplanted the following March or April to 4 or 5 in. apart. When large enough they may be budded in late summer or winter, or potted and grafted low down, in a warm bed.

CLIANTHUS DAMIERI GRAFTED UPON COLUTEA.

WE are indebted to M. Marc Micheli, of Geneva, a learned botanist and a skilful cultivator, for the accompanying illustration (fig. 157), which shows the success which he has met with in grafting *Clianthus Damieri* on to *Colutea arborescens*, a perfectly hardy shrub. The result is, that the *Clianthus* is rendered perennial, and flowers freely in the winter in a warm greenhouse.

TRADE NOTICE.

MR. A. E. NEWBERRY, until recently in the employment of Sir Osley Wakeman, Yeaton Peverey, Shrewsbury, has commenced market gardening on his own account at Duryard Gardens, St. Davids, Exeter.

VEGETABLES IN FRAMES.

SPINACH.—This crop is not often grown in frames, but upon occasion we have found it to be most profitable. In our own case autumn-sown Spinach does not succeed in wet winters, but if sown in pots, planted out on a warm border, and sheltered for a time, or if sown broadcast in cold frames and thinned early, it does succeed. We sow the seeds in February for April and May supplies. The variety known as The Carter is a very large-leaved variety, and a quick grower, being ten days earlier than Victoria when both are grown side by side.

TURNIPS.

The older varieties of Turnips when grown under glass often "bolted" badly, and did not bulb freely, so much so, that time and valuable space were lost. For the last few seasons we have grown Carter's Early Forcing Turnip in frames for a spring supply, and for the purpose it is unequalled, but it succeeds best when forced slowly and afforded ample ventilation and plenty of moisture. It may be had fit for table in less than three months from the time of sowing, so that if seeds be sown in February the crop will be ready early in May. This is the variety Mr. Beckett staged so well at the recent Temple Show. It is an oblong-shaped root, and does not age so quickly as flat-rooted varieties. For years I forced the Early Milan variety in frames, and obtained a good return. This is a very early maturing root, but given much warmth soon runs, and does not remain sound so long as the long-rooted kind noted above. Large quantities of the oblong Turnips are forced in France, and many find their way into our markets.

CARROTS.

Freshly-grown Carrots are almost as valuable as Turnips, though autumn roots may be kept sound a longer time. Carrots take a longer time to force, as the seeds do not germinate so quickly. For cultivation in frames we sow seeds earlier than we do Turnips, and also afford a little warmth from leaves, which gives the seed a start. If the sowing is done early in February, there may be a good supply of roots about the end of May and early in June. Many Carrots are ruined in the seed-bed by being crowded too much at the start—indeed, this remark applies to other roots, Turnips especially. They like a rich, porous soil, and the bed should be made firm to encourage early bulbing. The growth will be better if the plants are not too far from the glass. Carrots require much moisture from the time they are thinned, and I would recommend the beds to be made flat, for if sloping, the top portion often becomes much dried; it is also desirable to make the bed as solid as possible, any shrinkage being made good before sowing the seed. Such kinds as Early Nantes, a small-topped variety; the Parisian Forcing, and Sutton's Early Gem, are excellent for cultivation in frames. The last-named variety is the largest of the three, and it is of splendid quality. G. Wythes.

THE APIARY.

SWARMING.

So far this season, bees have caused but little bother in this respect, the weather being all against it in every way; and to the bee-keeper who wishes a good return of honey, this will be a subject for rejoicing, because at the present it bids fair to be anything but a good year in many districts, and in consequence prices must go up. So to those who are taking off good sections I would say, do not be in a hurry to sell, but keep them in a cool place, where the wax-moth or wasps cannot get to them; also avoid dust. Ordinary biscuit tins are very good articles to keep them in for the time being.

Be watchful that your customers who are giving you orders are all above-board, as we say, before the section or run honey is sent away.

All swarms should be replaced after the queen is taken away. Already bee-keepers are saying "My

bees have left the sections they were working in." Cold weather will cause them to do this very often; but in many cases the real cause lies in the bees having swarmed. To remedy this, do as suggested, and replace them. If, on the other hand, you want to increase your stocks, you may do so; but one should remember you cannot have bees swarming and honey as well.

A great many section-crates will not be put on yet, and unless the bees are very strong, they are much better left off. Allow them to collect and fill up their frames below, to assist them to pull through the winter aright.

WAX-MOTH.

This troublesome pest is again making its appearance, and unless the hives are very carefully gone through before placing on the crates, you will find, perhaps, your bees gradually dwindling down, and the wax-moths increasing, and in a very short space of time your hive will be entirely destroyed. Keep a little naphthaline in every hive, and where they are too thick, clean the frames, and place in a clean hive. Referring to clean hives, this should be more carefully attended to than is the case in a good many apiaries. They cannot be kept too clean, and this should be followed out; but in all cases now, disturb your bees as little as you can, and allow them to proceed on with their work. As our seasons now are so short, one cannot afford to let them lose their time.

A good trial will be given this season to the no-way bee section, and at the end of the season we shall be all glad to know how they answer.

The import of honey for May reached the large total of £3,424. Why have to import, when we ought to raise it here? *Expert.*

THE WEEK'S WORK.

PLANTS UNDER GLASS.

By D. ROBERTS, Gardener to HUSSEY PACKE, Esq., Prestwold Hall, Loughborough.

Azalea indica.—Remove those plants which were forced the earliest, and have now completed their growth, to a sunny position out-of-doors, standing the pots on a bed of coal-ashes. They may be afforded some kind of temporary shade for a few days when the sun is hottest. Syringe the plants every evening, and do not permit them to become dry at the roots. If any of them require to be repotted, do the work as soon as the flower-buds have set. When the plants have been repotted, plunge the pots in coal-ashes, afford the plants slight shade, and syringe them daily. These plants must not be forced next year.

Camellias, Genistas, Deutzias, Myrtles, and Green-house vars. of Rhododendrons may be placed out-of-doors in partial shade, but they will need as great attention in respect to watering and syringing, as before. Specimen Orange, Palm, or Bay-trees may now be placed in positions in the pleasure-grounds.

Violets.—Give regular attention to the weeding and affording water to these plants. A mulch of spent Mushroom-bed manure will help to keep the ground cool and moist afterwards. Remove the runners from the plants as soon as they appear. Syringe the plants daily, dissolving a little soft-soap in the water, as a check to red-spider. Calvert's carbolic soft-soap, in the proportion of 2 oz. to 1 gallon of water, is more effectual than ordinary soft-soap in the destruction of insect-pests.

Souvenir de la Malmaison Carnations.—The earlier these are layered, the better chance will the young plants have to become well rooted before the autumn. It is essential to have a frame or two for this purpose, for thereby the rooting of the layers is accelerated, and heavy rains can be kept from them. Select the most vigorous plants as they pass out of flower, and thin out all weak growths, removing at the same time the lower leaves from the stronger shoots. Turn the plants out of the pots, and plunge them deeply into a bed of prepared soil in the frame to such a depth that the shoots are conveniently low enough to be tongued in the usual way; make each layer secure with a strong peg as the work proceeds. Layer first the plants at the back of the frame, and finish off at the front. The

soil in frames which have been used for early Potatoes, Carrots, &c., will only need to be afforded a liberal addition of coarse river sand to make it fit for the purpose. The old plants should be watered previously to turning them out of their pots, and when layering has been done, afford water with a fine-rose can; place the lights on the frame, and shade during bright sunshine. Remove the lights during fine nights, and slightly spray the layers in the morning. Close again at 6 A.M. In the course of a month or five weeks the plants will be sufficiently advanced to be potted into 3-inch pots.

Pelargoniums.—As the most forward of the show and fancy varieties pass out of bloom, they must be afforded less water, and removed to a warm spot out-of-doors, sheltering them from heavy rains until the growths are sufficiently matured to be pruned back to two buds. When they break, place them in a cold frame, and syringe twice daily, affording no water at the root for a time. Propagate the young growths of choice varieties by placing them singly into small pots and putting them in a frame in which the temperature is 55° to 60° during the day; afford ventilation at night. Late-flowering varieties may be put into the greenhouse; they will need frequent fumigation to kill aphids.

General Remarks.—Continue to pot into their flowering pots such plants as *Celsia cretica*, *Francoa racemosa*, *Celosias*, and late *Fuchsias*. Propagate a further batch of *Coleus* for winter decoration and stove plants. Pot the forwardest plants into 16's, affording abundant space and room for the plants to increase in size; keep them close to the glass in full sunshine. Pot *Solanums* into 6-inch pots, and grow them on in frames.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to R. I. MEASURES, Esq., Cambridge Lodge, Flodden Road, Camberwell.

Intermediate-house.—The description of Orchid-house known among gardeners under the term intermediate is more generally met with in gardens than any other. The conditions prevailing in this division at the present season should be constantly under observation, it being an important point that its degree of warmth should be within a few degrees of the normal condition, which involves the damping the floors and stages early in the day, so that the ventilation may be afforded betimes. Then there is the matter of shading the plants, which must be done before the sun's rays have become so powerful as to scorch the foliage. When the shading is in position, although the sun's rays may be powerful, if a cold wind is blowing it will quickly become necessary to reduce the quantity of air admitted to the house. It is in this division that green and black aphids give a good deal of trouble, owing to the liberal ventilation afforded. Thrips swept from off the outside vegetation are carried through the ventilators in windy weather, and the large scale-insects infest soft-leaved plants more than is the case in any other division; and the plants need, as I have said, to be constantly under observation. Some of the plants, such as *Lycaste Skinneri*, whose new growth is advancing, are putting forth roots from the base of the growth, a time at which, potting, if not previously carried out, may receive attention forthwith. If the garden is in the pure air of the country, a little turfy-loam may be added to the compost with advantage.

Anguloas in need of repotting may be afforded a compost similar to that recommended for *Lycastes*.

Oncidiums.—The various *Oncidiums* of the *O. crispum* section are producing their flower-spikes, and should be encouraged to expand their flowers; and in order to prevent these plants becoming unduly shrivelled, the flower-spike should be removed from the plants as soon after all of the flowers on a spike are expanded. The degeneration commonly noticed in *Oncidiums* can be traced to the retention on the plants of their very abundant flowers. *O. Marshallianum* and *O. varicosum* suffer more quickly from this cause than any other of the species; but all should be relieved of their flower-spikes as early as may be. I find these plants succeed if they are removed to a cool-house during the warmer months, a season at which the plants are at rest. *O. cheiroporum*, *O. ornithorhynchium*, and others, which are now making growth should be placed within a reasonable distance of the roof glass. I find *O.*

Cheirophorum succeeds when suspended; *O. ornithorhynchium* will also do well in the cold house, but the white flowered variety requires a slightly warmer temperature.

Cumbidiums, if grown in the intermediate-house, should be carefully inspected from time to time for the presence of red spider, which attack the under sides of the leaves, soon causing their permanent disfigurement.

Masdevallia Chimera, and others like it, which are best cultivated during the first half of the year in the intermediate-house, should be kept cool and shaded, care being taken not to afford an excessive amount of water before it is accustomed to its new quarters, or to let cold draughts reach it. Fumigate the plant at regular intervals, and remove scale from the leaves with a sponge.

Miltonia vexillaria should be afforded fairly dry conditions after the flowers have been removed, and a very small amount of water applied at the roots for a few weeks. If the stages are covered with coal-ashes or other absorbent materials, the moisture afforded by frequent dampings is sufficient to sustain *M. vexillaria* until the new growths get well away from the base, after which time more root-moisture may be safely afforded.

THE HARDY FRUIT GARDEN.

By C. HERRIN.

Currants and Gooseberries.—If the bushes have made much growth, the laterals may be shortened, and the points of the leading shoots pinched off, so as to let more light and air to reach the inner parts of the crown, and give size and colour to the fruit. Currant bushes are sometimes infested with aphids, which chiefly congregate on the points of the shoots, and the recent dry weather has favoured their increase. The readiest method of dealing with the infliction is to pinch off the tops of the shoots and burn them. The main shoots of young bushes, or those whose size it is desired to increase, should be allowed to extend without being stopped. After the bushes have had their shoots stopped, they would be the better for being washed with the garden-engine and clear water. Young bushes not bearing fruit may be washed with quassia-water.

Gooseberries for dessert.—If the bushes are heavily cropped, severe thinning should be practised if fruits of a good size are looked for, and all fruits on branches near to the ground should be stripped off whilst still fit for kitchen use. In dry weather red-spider is sometimes troublesome on the Gooseberry, and prompt measures should be taken to prevent the spread of this pest. Gishurst Compound-soap and water applied at the advertised strength is a good remedy, as are frequent applications of clear water with the engine or a powerful syringe. Where mixtures of quassia or Gishurst are used, the bushes should afterwards be washed with clear water, which will remove all traces of these substances. If the caterpillars of the Gooseberry saw-fly are troublesome, and the attack is not a severe one, hand-picking will soon clear them off. Poisonous remedies such as Hellebore should only be used when the attack is a severe one.

Thinning fruit.—Where Plums have set thickly, some amount of thinning is necessary, and likewise the undersized fruits of the Morello and sweet Cherries should be removed. The same operation should be carried out if Apples and Pears of extra large size are desired, and if it be not carried to excess thinning gives the best returns in specimen fruits fit for exhibition purposes. Low standard and bushes should always have a heavy crop partially thinned early in the summer, and still further when the season is more advanced. The fruits should be evenly distributed over the crown, and in such parts of the circumference as are most touched by the sun, so that they may get highly coloured.

THE KITCHEN GARDEN.

By J. MAYNE, Gardener to the Hon. MARK ROLLE, Bicton, East Budleigh, Devonshire.

Leeks.—Thin the plants to about 1 foot apart where sown in drills for standing to form roots, and plant out the main crop as described in my Calendar for April 27, making sure that the ground is well moistened before and after planting, unless the weather should be showery.

French, and Scarlet Runner Beans.—Make a moderate sowing of the first in drills drawn at 2 feet apart, dropping the seeds at 6 inches apart,

and previously moistening the drills. Another sowing may be made in about a fortnight. Earth up plants that have attained the height of 6 inches, and apply water in dry weather when the flowers are set, if not absolutely necessary before. Gather the produce as it becomes ready for use. Scarlet Runner Beans sown at the end of June often prove a useful crop in the late autumn in Devonshire, but the date may be too late for all excepting the warmer shires.

Celeriac.—Plant on the flat in rows, 18 inches by 12 inches, first divesting the plants of all sucker growth, and a few of the lowermost leaves, and planting shallow. This fine vegetable, like the blanched variety, likes plenty of water at the root during growth, and succeeds in any rich, sandy soil.

Broad Beans.—Draw soil up to young plants, and in the case of older plants nip off or cut off with a sickle the tops of the stems as soon as a good number of pods are formed from the base upwards. By doing this early, and burning or burying the tops, innumerable black aphids are got rid of.

Potatoes.—The earliest croppers, such as Sharpes' Victor, Beauty of Hebron, Early Puritan, &c., are turning out well, although last month was very deficient in rain, at a time when the plants required plenty of moisture in the soil. Later crops do not give much promise at the present date, but with the much needed rain which fell here on the 19th, an improvement in the appearance will soon be noted. If rooks or jackdaws prove troublesome, place "rook-twine" tied crosswise on sticks over the plot about 6 yards apart, and a little higher than the haulm.

Hints on work in general.—Let the planting of Broccoli, Kale, Savoys, and the like be pushed on, and as soon as the earlier Peas are past, remove the haulm, and if the ground will not be occupied with Celery, manure and dig it as the case may require. It is good practice to afford such plots a moderate dressing of soot or lime, before digging them one spit deep, which is advisable after such a long drought as we have experienced, especially on heavy soils, as it gives the rain a better chance of penetrating to a good depth. Land that is to be planted soon after it is dug should be made firm by treading it evenly and regularly all over; and the plants set out on it must be made firm with the dibber. All thinning of crops should now be finished whilst the land is moist.

THE FLOWER GARDEN.

By T. H. SLADE, Gardener to Lord POLTMORE, Poltmore Park, Exeter.

The Rosery.—The season so far, though very trying for many kinds of plants, has suited the Roses; and we have not experienced much trouble from the leaf-roller or aphides. The blooms will not be early, owing to the unseasonable coldness of the weather. The wood and foliage being clean, some warm rains would soon cause the flower-buds to open freely. When the plants come into flower, they should be examined almost daily, and spent flowers removed, partly for tidiness sake, and also to relieve the plants. The flowers, if required for *pot pourri*, should be gathered when dry, and be pulled to pieces, and the petals laid out fully exposed to the sun, and be turned occasionally till quite dry, when they should be put into a cool, airy place until a sufficient quantity is dried for tilling bowls and jars. After the first crop of flowers is past is a suitable time to sprinkle artificial manure around the plants. Willis's Rose-manure or the Ichthemio-guano are safe kinds to use; and if the beds were manured with farmyard dung, a vigorous growth and plenty of flowers may be expected. Artificial manures have the best effect if spread on the soil when rain appears imminent, or during a shower, stirring them in with a hoe. In the event of no ordinary manure having been used, dependence may be had on artificial manure alone with very satisfactory results. It may be dug in like ordinary manure, in winter or spring, and slight quantities may be employed also during the summer.

Climbing Rosas should have the young growths secured to the wires or the wall, especially the vigorous shoots that will produce flowers next year. The shoots may be lightly slung up for the present, as later it may be necessary to loosen them in order to cut away the growths which have flowered. If the roots of these Rosas are in warm, dry positions, abundance of water, followed by a light mulch, should be afforded.

Climbing Plants generally, on Walls, &c.—The shoots of most species of plants will require a little attention at this season in the matter of regulating and securing them. Where a plant has not filled its allotted space, some shoots should be specially laid in for the purpose. The shoots of Ivies not required for covering spaces should be removed; and early-flowering creepers may require some of the older wood to be removed, and if it can possibly be done now, it is the best time for carrying it out. Honeysuckles have flowered profusely this season where the plants are fully exposed to the sun, but in other positions rampant growth does not appear to have got ripened sufficiently to produce much flower. These charming old-fashioned plants are very effective trained up the boles of dead trees or over stumps, or when allowed to ramble over a roostery. The best, perhaps, for fragrance and colour is *Lonicera grata*, which is now passing out of flower; it is a vigorous grower, and superior to the old Dutch variety.

FRUITS UNDER GLASS.

By MATTHEW MCINTYRE, Gardener to Sir CHAS. TENNANT, The Glen, Innerleithen, Peeblesshire.

Strawberries in Pots.—Early runners for layering in pots are best furnished by early-planted runners of last year. The plants will afford the strongest and best runners for layering which are not over-cropped, and which are well supplied with water. The recent dry weather has not been favourable for the production of runners in some parts, and in the event of the dry weather continuing, the plantations should be afforded water occasionally and the ground a mulch of strawy manure. Runners may be layered in small pots, on to turves, or directly into the fruiting-pots. It is essential that the first runners from a strong plant should be selected, and the soil in the pots kept uniformly moist. If layered into the fruiting-pots they should not be detached until thoroughly established in the soil. Vicomtesse Héricart du Thury, La Grosse Sucrée, and Royal Sovereign are some of the best varieties for early forcing. The first of these sets well in dull weather, and is of fine flavour. La Grosse Sucrée is valuable when the plants have to be grown in vineries, as the large smooth leaves do not encourage red-spider like many of the rough-leaved varieties. Royal Sovereign has large, handsome fruit, of good flavour, and it has proved to be one of the best here. Those layered in 3-inch pots or squares of turf should, as soon as well rooted, be detached from the mother plants, and be placed in a shady spot for a few days, preparatory to shifting them into the fruiting pots. These may be of 5 inches in diameter for very early forcing, 6 inches for succession, and 7 inches for late work. The pots must be thoroughly clean, have a large crock, with three or four of lesser size above it, and some smaller still, in each, so as to form about an inch of drainage. These should be covered with the rougher parts of the compost rammed tightly down upon them. Turfy, strong rather than light loam must form the staple of the compost. This should be broken up roughly, adding a quart of Thomson's manure, and a similar proportion of wood ashes to every bushel of soil. Let the compost be moderately dry when used, for if wet it will shrink, and leave the sides of the pot. Bring the soil in the pot up to the required height, ram it firmly, and finish so that the base of the crown will be about half an inch below the rim which must be left clear for holding water, allowing a little more for the larger sizes of pots; stand the pots on a hard bottom in an open sunny situation, but one sheltered from strong winds, with sufficient space between them to allow of the full exposure of the foliage. To prevent worms entering the pots give the standing place a slight sprinkling of soot. Afford water as may be required, and sprinkle the foliage for a few days after potting. If this can be followed up every evening it will greatly assist the plants. When the roots are working freely in the fresh soil, copious supplies of water will be needed, especially in dry weather, always applying sufficient to moisten the entire ball. Remove all weeds and runners as they appear.

A NEW ROSE.—We are informed that a beautiful new Rose, Jean Dupuy, named in honour of the French Minister of Agriculture, will be put into commerce in 1902. It obtained the 1st prize at the Paris Exhibition. The bud is very large and long, the ground colour pale yellow, tinted with carmine; and growth vigorous. It was raised by M. P. LAMBERT, of Trèves, and is considered by the connoisseurs as an excellent Rose for cutting.

APPOINTMENTS for the Month of JULY.

TUESDAY, JULY 2	Royal Horticultural Society's Committee (Roses), at the Drill Hall, Westminster. Royal Horticultural Society of Southampton, Exhibition (two days). Hereford Horticultural and Rose Show.
WEDNESDAY, JULY 3	County Borough of Hanley Horticultural Fête (two days). Croydon Horticultural Society's Show. Farnham Horticultural and Rose Society's Show.
THURSDAY, JULY 4	National Rose Society's Metropolitan Exhibition, in the Gardens of the Inner Temple, London. Norfolk and Norwich Horticultural Society's Rose Show.
SATURDAY, JULY 6	Royal Botanic Society's Meeting. Société Française d'Horticulture de Londres, Meeting.
SUNDAY, JULY 7	Ghent Horticultural Exhibition.
TUESDAY, JULY 9	Wolverhampton Horticultural and Floral Fête (three days).
WEDNESDAY, JULY 10	Horticultural and Rose Shows at Tunbridge Wells and Formby (Lanes.).
THURSDAY, JULY 11	Bath Floral Fête and Rose Show.
SATURDAY, JULY 13	Manchester Royal Botanical and Horticultural Society's Rose Show.
TUESDAY, JULY 16	Royal Horticultural Society's Exhibition and Conference on Lilies, at Chiswick (two days). Kidderminster Horticultural and Rose Show.
WEDNESDAY, JULY 17	National Rose Society's Northern Exhibition at Ulverston, in connection with the Lonsdale Rose Society. Cardiff and County Horticultural Society's Show (two days).
THURSDAY, JULY 18	Royal Botanic Society, Meeting.
FRIDAY, JULY 19	National Carnation and Picotee Society's Exhibition, at Crystal Palace (?).
TUESDAY, JULY 23	Durham, Northumberland, and Newcastle-on-Tyne Botanical and Horticultural Society's Show (two days).
WEDNESDAY, JULY 24	Boston (Lines) Horticultural Show and Messrs Johnson's Culinary and Sweet Pea Show (two days). Southern Counties Carnation Society's Exhibition at Southampton.
THURSDAY, JULY 25	National Sweet Pea Society's Show at the Royal Aquarium, Westminster (two days).
TUESDAY, JULY 30	Royal Horticultural Society's Committee, Meeting at Westminster.

SALES FOR THE ENSUING WEEK.

TUESDAY, JULY 2.—Clearance Sale of Greenhouse Plants, Orchids, &c., at Eldon Lodge, 9, Herne Hill, S.E., at 12.30, by Protheroe & Morris.
FRIDAY, JULY 5.—Collection of well-grown Orchids in great variety, thirteen cases of *Cattleya Trianae*, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three Years, at Chiswick—62.9°.

ACTUAL TEMPERATURES:—

LONDON.—June 26 (6 P.M.): Max. 74°; Min. 54°.

June 27.—Fine, warm.

PROVINCES.—June 26 (6 P.M.): Max., 73°, S. E. Counties; Min., 52°, Orkneys.

The National Rose Society and its History.

"There is a tide in the affairs of men which, taken at its flood, leads on to fortune;" and taking fortune not to mean money, but success and prosperity, as our great poet intended, we have seen, even in horticultural affairs, many proofs of the truth of this saying. We have seen splendid opportunities thrown away, while others, whose beginnings were small, have ripened into full development and great success, and now the National Rose Society presents itself to us as one of the claimants of this good fortune, and we think we shall be doing a service to our readers if at this time, when the Society is making a great advance, we should lay before them a succinct account of its past history, and detail its present position.

Those who can look back some years will be able to recall the poor condition into which the Rose had fallen. Some of our leading nurserymen—the firm of PAUL & SON, Cheshunt; WILLIAM PAUL & SON, Waltham Cross; and CHARLES TURNER, of Slough—had, it is true, cultivated the Rose with great success, but the triumphs of their skill were mostly to be seen in those marvellously large plants filled with bloom which so astonished the foreign nurserymen at our great exhibition of 1866. But we are referring now more especially to the exhibition of cut Roses. Those shows were generally open for two days, if not more, and those who have seen the character of the flowers towards the end of the first day, can readily imagine what miserable objects they presented on the second day. There were some amateurs, it is true, but they were comparatively few. But little encouragement was given to them, and they were shy of exhibiting. In this condition of things it had occurred to a horticulturist, who was well known in the horticultural world, to put before his fellow lovers of the Rose some ideas that might lead to a successful issue. So it was on a dreary, murky day in December, 1876, when the sky was leaden, and the streets "sloshed" with wet, that the Rev. H. HONYWOOD D'OMBRAIN, who as a veteran retains all his old enthusiasm, invited all lovers of the Rose to meet in London to consider the matter. He had the previous year been the means of founding the Horticultural Club, and so was able to offer to those who were invited a place of meeting on the Adelphi Terrace, facing the great river. The room was not a large one, low pitched, but it was the best that could be offered free of charge, and there the meeting took place. Circulars had been sent to all the prominent Rose growers, both amateur and professional, and the result was looked forward to with some degree of anxiety. The convener of the meeting was accustomed to organising: some years before he had founded the Natural History Society of Dublin; and in conjunction with another friend, the Horticultural Improvement Society of Ireland. The result was anxiously awaited; no manager of a provincial theatre could have more nervously passed behind the curtain to see whether the company was responding to the glowing placards that he had put out. He had stated the matter very plainly and quietly, mentioning in the circular that he had issued that one great *raison d'être* that the Society projected was to banish once for all the two days' Rose shows. As the hour of meeting approached, it was noticed that some of our leading rosarians had entered the room; many of these have since gone from us, though some still remain. Canon HOLE, now Dean of Rochester, had long been known as an ardent rosarian, and his charming book on the Rose had made many converts to its culture; so when he entered the room and expressed his thorough approval of the proceedings, it was felt the battle was half won. So the National Rose Society was founded: Canon HOLE consented to be its president. The Rev. H. H. D'OMBRAIN consented to be its secretary, provided he had nothing to do with the finance, which department was undertaken by Mr. H. K. MAYOR. A committee was formed of those present, the number of which was afterwards increased to forty, and a more business-like committee, and one in which the members worked more harmoniously together, could hardly be found. A subscription list was entered into, and of course the first thought was, ought we not to have an exhibition.

This was answered by an unanimous voice in the affirmative, and so steps were taken to initiate the first National Rose Society Show ever held—but the question was, where was it to be held? Then, as now, the great want of horticulturists in London was a proper place for exhibitions, and after some considerable questioning, it was determined to take St. James's Hall for the purpose; and thither flocked a number of exhibitors, both amateur and professional, and it was soon found that the room would be too full, so that the stands of flowers had to be placed in the orchestra, and indeed in every available space. There is one very material question in all such entertainments, namely, will it pay? Well, the room was filled to overflowing, and the executive began to hope that it would be a success—but alas! when the accounts were made up, and all expenses paid, it was found that there was a large deficiency.

The question arose, was the whole scheme to be abandoned, and was the National Rose Society to be one of those miserable things which perish at its birth? Its supporters said No. The prize-holders, who were the only creditors unpaid, they consented to take a portion of their prize-money and leave the remainder for better times. This showed a generous spirit on their part, which was amply rewarded when two years after the debt was paid off.

When the question of the site of the next exhibition had to be decided, the unanimous wish of the supporters of the Society was that it should go to the Crystal Palace. The company had for years held a Rose show there, and so it was proposed that the National should take its place; and while the company contributed a subsidy towards the prize-money, the Society should take the management of the show, arrange the schedules, and distribute the prize-money to the winners—and there the exhibitions were for some years held. But the Society was subject to many inconveniences to which, not being their own masters, they had to submit. The German gymnastic societies, exhibitions of carriages, and other special shows, interfered with the space allotted to the Society; while, worst of all, when the Shah of PERSIA, accompanied by their Royal Highnesses the Prince and Princess of WALES, visited the exhibition, it was shut out of the Palace altogether, and had to be contented with a low and stuffy tent at the north end of the gardens, so that the Royal Patroness must have had a very poor idea of what the Society was able to do.

It was no wonder, then, that the Society, after some years of experience of the Crystal Palace, was induced to connect itself with the Royal Horticultural Society; but it was in the evil days of the Royal Horticultural Society, and notwithstanding the objectionable feature of the Crystal Palace shows, the executive felt they must return, and so they continued there for many years.

In the meantime a great change had taken place in the character of the exhibitions. Many persons complained that the contests were unfair, inasmuch as large and small growers were grouped together, and it is an axiom in war that victory is generally on the side of large battalions; and so when Mr. CHARLES J. GRAHAME introduced his plan of dividing exhibitors into classes according to the number of plants grown by them, it was felt that a step was taken in the right direction. Objections were, indeed, made by many in influential positions. But the members wished it to be tried; it was so, and it worked with unqualified success. But the Society was a national one

and so it was felt that the exhibitions ought not to be confined to the metropolis, and therefore a northern and a southern provincial show were established in various places as far north as Ulverston in the Lake district, and in Edinburgh, imitating in this respect the Royal Agricultural Society. Another object the Society had in view was that of publishing short manuals on subjects connected with Rose cultivation, giving short and plain directions on points connected with it.

And now the Society has made another venture, and we hope that success will reward their courage. They have thrown away all crutches, and adventured upon the courageous policy of holding a show entirely on their own account. The Treasurer and Benchers of the Inner Temple have most kindly given the Society the use of their gardens (which have already been so successfully connected with the exhibitions of the Royal Horticultural Society) to hold their show there on July 4, and from all we hear a splendid exhibition is likely to be seen. Great prominence will be given to the decorative use of Roses in a cut state, and many classes have been arranged to carry out this idea. It is said that the celebrated incident connected with the Wars of the Roses took place in these gardens; but the other wars which we hope will take place in July will be of a very different character, and we can only trust that the anticipations of the Society may be realised, and that it may justly be said that the exhibition to be held there on Thursday next was the finest exhibition of Roses ever held in London.

From a notice elsewhere given, it will be seen that we intend to commemorate the occasion in our own way, and we invite rose-lovers who are not already on our subscription list to apply to the Publisher without delay.

SPECIAL NOTICE—The *Gardeners' Chronicle* for July 6 will contain, besides a full report of the National Rose Society's grand show of Roses to be held in the Inner Temple Gardens on Thursday, July 4, a large number of illustrations of fine varieties of exhibition Roses. As the demand for this number is likely to be large, and it cannot be reprinted, Rose lovers, Rose growers, and advertisers should make immediate application to our publisher for any extra copies or advertisements they require.

ROYAL HORTICULTURAL SOCIETY.—The Royal Horticultural Society's Rose Show will be held on on Tuesday, July 2 (in conjunction with the National Rose Society), in the Drill Hall, Buckingham Gate, S.W., from 1 to 5 P.M., two days before the great show at the Temple. We are glad to note that the council have seen the need for the reduction of the number of exhibits on this occasion, for with the exception of plants, &c., shown for Certificate, no other plants, or groups, &c., except Roses, may be exhibited at this meeting. For schedule of prizes, see Royal Horticultural Society's *Book of Arrangements for 1901*, p. 69. A lecture on "Mimetic Resemblances among Plants, a Proof of the Inheritance of Acquired Characters," by the Rev. Prof. GEO. HENSLOW, M.A., will be given at 3 o'clock.

READING AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.—The June meeting of this Association was held at Crowsley Park, Oxon, on Friday evening, June 21, when between fifty and sixty members were present. Crowsley is a unique garden, where herbaceous perennials abound, and are allowed to grow unrestrained by knife or spade, and where the Roses in beds and borders grow wild, and yet present wondrous blooms in immense numbers. At the close of the ramble, a hearty vote of thanks was

accorded to Col. BASKERVILLE for the permission to hold the meeting in his grounds; and to Mr. TUBE, the gardener, for his interesting remarks respecting the various plants noted.

FLOWERS IN SEASON.—Some sprays of vigorous-growing Acacias and Robinias come from Messrs. A. WATERER & SON, Knap Hill Nurseries, Woking, Surrey. We remark among them *Robinia hispida grandiflora* with dense racemes of purplish-rose coloured flowers, slightly larger than the type; *Robinia Neo-mexicana*, a tree of moderate growth, with reddish-purple flowers; *Robinia pseudo-Acacia Decaisniana*, with light rosy-purple coloured flowers; and other A. p.-A. varieties, one with yellowish-foliage named *aurea*. Too much cannot be said in praise of Robinias in the garden; and all of them endure town smoke and impurities without suffering, and even the dryness of the soil caused by sewers in towns does not seem to act inimically upon them. Those of our readers who know the Royal Horticultural Society's gardens at Chiswick need not be reminded of the beautiful row of trees of *Robinia pseudo-Acacia Bessoniana* which adorns the Sutton Court Road.

WREATHS CAST ON THE WAVES.—"For the first time on this side of the continent (America) the countless graves of the great deep were decorated yesterday from the deck of the battleship *Massachusetts*, now lying at the Brooklyn Navy Yard. This was in accordance with the movement recently set on foot in California, and endorsed by Admirals DEWEY, SAMPSON, and SCHLEY. 'Strew flowers on the ocean waves on Memorial Day,' was the watchword recently sent far and wide by those interested in the movement, at whose head is Mrs. A. S. C. FORBES, of Los Angeles. The service was conducted by Chaplain WRIGHT, of the *Massachusetts*, who spoke briefly. A requiem hymn was then sung by Yeoman SNYDER, of the ship's company. Several beautiful wreaths borne by the bluejackets were now brought out to the gangway, but before casting these upon the water the chaplain repeated the decoration hymn:

Cover them over with beautiful flowers,
Deck them with garlands, those brothers of ours,
Lying so silently by night and by day,
Sleeping the years of their manhood away.
Give them the meed they have won in the past,
Give them the honours their future forecast,
Give them the chaplets they won in the strife,
Give them the laurels they lost with their life.

Lifting the first wreath, the chaplain then said, 'For our heroes,' and cast it out upon the gently lapping waves. The second wreath was then given 'for loved ones.' Finally, raising in both hands a large wreath and saying, 'In tender memory of all God's children who have perished at sea,' he let it fall into the water, all the heads of the ship's company being reverently bowed." *Exchange*.

ANATOMICAL RESEARCHES ON THE RIPENING OF THE WOOD IN THE VINE—The *Comptes Rendus*, for March 11, contains a note by M. KÖVÉSSI on the above subject, in which the author arrives at the following conclusions:—The branches are so much the better ripened according as their cell-walls are thicker, and as their cells contain more starch; that is to say as their "differentiation" is more complete. The badly-ripened branch has undergone the anatomical transformations of ripening, but only to a small extent; it is arrested at a premature stage of development and differentiation of its tissues.

"GARDENING FOR BEGINNERS: A Handbook to the Garden." By E. T. COOK. The "Country Life" Library (published by *Country Life*, 20, Tavistock Street, Covent Garden, W.C.; George Newnes, Ltd., 7-12, Southampton Street, Covent Garden, W.C.). It is pleaded in the preface to this book that there is need for its publication, in spite of the multitudes of others devoted to gardening. At any rate, this is a bulky tome of information on all the time-honoured subjects—the mixed borders, the sowing of seed, bedding, climbing and bulbous

plants, the rock-garden, lawn, glasshouse gardening, and a monthly calendar. The "most precious" (where is the line to be drawn?) garden-flowers and fruit and vegetables are all duly treated, and the index seems full and useful. For the rest, the information is practical, and may be relied upon for reference. To teach gardening wholly from books is, of course, impossible; but the present volume should certainly be easily read by those who can bring a little practical knowledge to assist them in their education. Mention must be made of the illustrations, as in these modern gardening books show a great advance. Instead of the formal sketches of plants and groups, we have here photographic and other truthful representations of some of the newest introductions, and delightful pictures of special plants and of groups and vistas. In fact, *Gardening for Beginners* is undoubtedly a good book of its kind, and amply worthy of forming an addition to an already very large literature of the same subject.

THE HORTICULTURAL HALL, BOSTON, MASS.—We have already mentioned and illustrated the new Hall erected for the Massachusetts Horticultural Society at the cost of a million dollars. It was duly inaugurated on June 8 with a magnificent show, arranged by Prof. SARGENT. It was not a competitive trade exhibition, but a display of the best collections the neighbouring country afforded, arranged, not on commercial principles, but on artistic lines, like the great Ghent shows, and was, we learn, thoroughly successful. We have been favoured with a series of photographs, from which we may later on make a selection for reproduction. In the meantime we may congratulate our Boston friends, and hope that the time is not far distant when London may boast of a similar Institute.

CERCLE HORTICOLE VAN HOUTTE.—This society, instituted in honour of the late LOUIS VAN HOUTTE, proposes to hold its third general exhibition at Ledeborg by Ghent from August 11 to August 18. Foreign exhibitors will be invited to take part in it. Communications should be addressed to the Secretary, M. ERNEST DELARUYE, Chaussée de Bruxelles, Gand. The schedule is very comprehensive.

WEATHER LORE FOR JULY.—

"And ever since, whenever a shower
Falls on St. Swithin's Day,
'Twill pour for forty days on end,
So ancient ladies say."

Legend of St. Swithin.

"St. Swithin's Day, if thou dost rain,
For forty days it will remain;
St. Swithin's Day, if thou be fair,
For forty days 'twill rain aae mair."

"In this month is St. Swithin's day,
On which if that it rain, they say,
Full forty days after it will
On more or less some rain distil."

"A shower of rain in July, when the corn begins to fill,
Is worth a plough of oxen, and all belongs theretill."
J. C.

PLANT PORTRAITS.

- ANEMONE JAPONICA, Siebold & Zuccarini, and varieties.—*Die Schönsten Stauden*, Lief. 11.
APIOS TUBEROSA.—*Meerhaus' Monthly*, June.
AQUILEGA VULGARIS, STELLATE VAR.—*Die Schönsten Stauden*, Lief. 10.
ASTER NOVI BELGI, VAR. A. CORDIFOLIUS and VAR. MAJOR, A. GRANDIFLORUS, LIMBOSUS and A. DOLBY.—*Die Schönsten Stauden*, Lief. 11.
CAMPANULA PERSICIFOLIA VAR.—*Die Schönsten Stauden*, Lief. 10.
DELPHINIUM, CULTIVATED FORMS.—*Die Schönsten Stauden*, Lief. 11.
EUCHINOPS HUMILIS, HOLL.; E. RETRO, and E. HYBRIDUS.—*Die Schönsten Stauden*, Lief. 12.
HELLEBORUS HYBRIDUS.—*Die Schönsten Stauden*, Lief. 12.
HYACINTH CZAR PETER.—Compact spike, single, light blue.—*Florilegium Haarlemense*, t. 43.
IRIS KEMPEERI, Sibbold.—*Die Schönsten Stauden*, Lief. 12.
IRIS SPANISH—1, RECONNAISSANCE, dull violet; 2, BELLE CHINOISE, yellow; 3, ALEXANDER VAN HUMBOLDT, violet.—*Florilegium Haarlemense*, t. 45.

LUPINUS ARBOREUS AND L. PODAPHYLLUS.—*Die Schonsten Stauden*, Lief. 10.
 PHYTOSTEMIA VIRGINIANA, Benth., and var. ALBA.—*Die Schonsten Stauden*, Lief. 11.
 PHYSALIS ALKEREINGI, Lionensis; and P. FRANCHETII, Masters.—*Die Schonsten Stauden*, Lief. 12.
 POLYGONUM POLYSTACHYUM, Wallich; P. COMPACTUM, Hook. f.; P. SACHALINENSE, F. Schmidt.—*Die Schonsten Stauden*, Lief. 10.
 ROSE LADY ARCHESEA, H. T., bright rose.—*Amateur Gardening*, June 15.
 TULIPS, VAN THOL, type, and the varieties, SCHARLAKEN (scarlet), ROSE, WIT (white), GIEL (golden).—*Floriegenom Haverdome*, t. 44.
 VERONICA ARCHEVALETTE, André, *Revue Horticole*, June 16.
 —A new species, introduced from La Plata by M. André, and dedicated to M. Archavaleta, of Monte Video. It is a greenhouse shrub, with linear-lanceolate leaves, and terminal tufts of heads of violet-coloured flowers.

FOREIGN CORRESPONDENCE.

HARDINESS OF CORYPHA AUSTRALIS.

M. MARTINET writes to us:—"I have read in the *Gardeners' Chronicle* (p. 408) a note respecting the hardiness of *Corypha australis* in Cornwall. You were perfectly right in considering that this Palm is not hardy in the south of England; it can hardly even be grown in the open ground without protection even in some special nooks on the French Mediterranean coast. At Monte Carlo, at Beaulieu, at Mentone, at Golf Juan even, this Palm suffers somewhat when the winters are severe; still it survives them, and fine and healthy specimens are to be admired in sundry grounds and public gardens. Needless to say, it is magnificent at La Mortola, in Mr. Hanbury's garden—he to whom so many interesting acclimatisation experiments are due.

The climate of Cornwall is practically the same as that of Brittany—a maritime climate especially modified by the proximity of the Gulf Stream. Now, in Brittany, the only Palm really hardy is *Chamærops* (brachiocarpus) excelsa.

I have tried hard in many grounds planted by me in the last five years to acclimatise *Jubæa spectabilis*, *Phoenix canariensis*, *Brahea Roetzlii*, &c., which may be considered as the hardiest Palms except *Chamærops excelsa*, but with no great hope of the well-doing of these plants, which, in my opinion, will assuredly suffer by the first severe winter if care is not taken to shelter them a little.

Further, this is the case in the neighbourhood of Pau, which, although in a much more southerly latitude, is, it is true, at a higher elevation (512 feet), and where, this winter, *Eucalyptus globulus* was completely frozen, and where *Acacia dealbata* suffered greatly.

In fact, I consider that *Corypha australis* is not hardy anywhere in England, and in France only survives in very favoured nooks in the Maritime Alps. *Acacia dealbata* is grown in the open air at Finisterre (Brittany), but only flourishes when fully exposed to the south, and sheltered from the north wind. For instance, this winter, which was rather severe, as you know, a great many of the young shoots were completely frozen."

HOME CORRESPONDENCE.

A NOTABLE ADVANCE IN FIRST EARLY PEAS.—For upwards of twenty years I have not been able to find a first early Pea to replace William the First, and during that time I have grown Sutton's Improved form of that good variety. This year I sowed Gradus, Sutton's Improved Ringleader, and William the First, on February 22. In point of earliness, Gradus and William the First are about equal, but in size of pod, quantity of Peas in pod, and flavour, Gradus is very superior. I have enclosed a sample of each variety for your inspection. *R. M., Newbury, June 18.* [Good samples of Peas, more especially Gradus and Sutton's Improved William the First. The first-named have the bigger pods, but these are not filled out with seeds; whereas the second are quite filled, and would yield more for the table. The colour is good in both varieties. Ringleader sown the same day—February 22—cannot be compared with the foregoing, the seeds are very small and pale green, and pods thin. Ed.]

PÆONIA OFFICINALIS ALBA-PLENA.—In answer to your correspondent "A. D.," in a recent issue of the *Gardeners' Chronicle*, I may state that we possess a white double-flowered variety of *Pæonia officinalis*. This plant is growing in an herbaceous border at Moncreiffe, but how long it has been there I am unable to say; but it is a large clump, and this year it had about twelve flower-heads. It is the only plant out of a great number that grow in the gardens which has white flowers. *A. S. Cole, Moncreiffe Gardens, Bridge of Earn, N.B.* [Our correspondent sent a bloom of the white variety, also one of the type. Ed.]

THE DROUGHT IN WARWICKSHIRE.—The effects of the long-continued drought are apparent on every hand, and vegetation of all kinds is suffering. In the gardens the haulm of Peas is stunted, and the earlier Cauliflowers are buttoning, and will yield in any case only small heads, unless rain comes in quantity soon. Globe Artichokes, newly-planted Seakale, Turnips, and other root crops and Brussels Sprouts are likewise at a standstill. Red and Black Currants are covered with black and green aphids, and the fruits are dropping. The Strawberry promises well here, because we have been enabled to afford them sufficient water. Fruit trees on walls would have presented a sorry sight had they not been afforded water both overhead and at the roots. Apples, Pears, and Plums, of all kinds, are a good crop, but the maggot and various aphides are causing injury. *H. T. Martin, Stoneleigh.*

MYOSOTIDIUM NOBILE.—The Chatham Island Forget-me-Not as grown at Antony House, Devonport, is one of the finest to be seen out-of-doors. It was planted by Major-General Sir Reginald Pole-Carew in the spring of 1899, and photographed quite recently by Miss Pole-Carew, is in a most healthy condition, full of flower-buds. The head gardener, Mr. Prince, informs me that it was planted in a pit filled in with sea sand, in which it seems to grow well. The plant measures 4 feet across, 2½ feet high, and is 12 feet in circumference. *A. C. T., June 11, 1901.* [See the account of this plant at Enys, at p. 417 of our present issue. See also our figure at p. 681, Vol. xxv., 1886. Ed.]

A QUESTION.—In reading an old book on Scriptural history of the prophets, &c., and in the history of Elisha, in reference to the pottage referred to in the Old Testament, and to the statement that there was death in the pot, I find that the name of the plant therein mentioned is *Coloquintida*—a name I cannot find, and think it must have got another name given by some other authority, unless Pliny mentions it in his history of the vegetable world, which I have not time just now to peruse. *J. C.* [The *Colocynthis* and allied Cucurbits grow in the Holy Land; the fruits are very bitter and poisonous, and are by some considered to be the Apples of Sodom. Ed.]

MANURES FOR FERNS.—In reply to "X" (*Gardeners' Chronicle*, p. 410), there is no doubt that the manure he refers to is one of the best, yet almost any of the artificial compounds will be found to be equally good if used with care. With regard to what may be termed excessive use, it will be found that plants which have become pot-bound, and have not previously had any manure, will readily respond when Clay's or any other manure is applied, and will make more rapid growth than when repotted into fresh soil, but after a time they will not continue to keep up the vigorous and healthy growth, for the soil becomes soured by continual application of artificial manures. I have made a good many experiments with various liquid and artificial manures, and have found that all Ferns are benefited by their use; though it should be used very sparingly with the tender slow-growing species, and only during the time of most active growth. Vigorous *Pterises* and *Adiantums* will take as much as any class of plant, but they cannot subsist entirely on any kind of manure without the addition of fresh soil periodically. I have known Ferns to be kept in the same pots for several years, and still continue healthy, particularly such as are dried off in the autumn and started again in the spring. Even with the evergreen Ferns, when partially dried off and kept cool in the autumn, they start with more vigour when restarted in the early spring, but manure should not be applied until the roots and fronds have started into new growth. In all cases, I believe it is more a question of judicious application than the kind of manure

used. If I made an exception it would be to avoid the use of fish-guano, particularly in a close moist house. Much may be said in favour of liquid manures, but there is one thing that should always be remembered—the absolute necessity of using it in a clear state. It may be made from cow-manure, horse-manure, or from guano and soot, but the latter should be avoided for *Adiantums* when growing for cutting from, and it produces the deep green tint in the frond which is not desirable. Liquid-manure should be prepared and allowed to stand several days before required for use. To be fit for use it should be as clear as wine, but I have always found it very difficult to convince many young men that it is as great a mistake to stir up the manure before using, as it is to stir up their Coffee-dregs before drinking it. I may add one more remark which is, that though it may be an advantage to let plants get moderately dry before applying manure, care should be taken that they are kept moist for sometime afterwards. *A. Hemslay.*

CENOTHERA SPECIOSA ROSEA.—I regret that I cannot respond with any confidence to Mr. Winn's request on p. 411, as it is some time since I grew *C. rosea*, and my plant of *C. speciosa rosea* did not survive the winter, although in a suitable place for *C. speciosa*. My opinion of its appearance is that it is not likely to prove a good hardy flower, and, subject to lapse of memory caused by the length of time it is since I grew the old *C. rosea*, I think that Mr. Winn may be correct in his idea. It is, however, a surprising thing if the Floral Committee gave *C. rosea* an Award of Merit, under the impression that it was a form of *C. speciosa*. *S. Arnott, Carsethorn, by Dumfries, N.B.*

RHODODENDRON PONTICUM ALBUM MULTUM.—I am sending a truss of flowers of this variety. It is seldom seen in collections, but is now making a good show here, and is much valued for its pretty and distinct flowers, and for its late flowering character. *James Mayne, Bickton Gardens, Devon.* [A charming variety with white flowers, spotted with red on upper petals. Ed.]

NURSERY NOTES.

STRAWBERRIES AT BEDFORD.

ON Monday morning last a party of gentlemen interested in the cultivation of fruit, left the London terminus of the Midland Railway system for Bedford, whither they had been invited by Messrs. Laxton Brothers to inspect their numerous trials of varieties of Strawberries. Amongst that number was a representative of the *Gardeners' Chronicle*, and a short note upon the varieties inspected may be interesting to our readers at this time, when Strawberries form the bulk of the fruit in season.

At the outset we may remark that Strawberry cultivation is a very large business with Messrs. Laxton, and many acres of land are wholly occupied with trials of seedlings, and by plants of listed varieties grown for the production of runners. Indeed the firm have persistently followed up the cross-breeding and selection commenced by the late Mr. T. Laxton in the middle of the last century, and have more or less regularly introduced to commerce new varieties that have possessed superior characteristics to those that hitherto existed. Particularly have the Laxton Strawberries been remarkable for the large size of their fruits, free cropping qualities, and strong constitution. The late Mr. T. Laxton catalogued *The Traveller* in 1866, and it is estimated that since that time the firm have made and studied from 60,000 to 100,000 crosses. The amount of detail that has to be attended to in such a work as this is almost incalculable. The work does not consist merely in effecting the crosses, but in keeping to themselves the plants which are the result of those crosses, and carefully observing all of them for one, two, or three years, until it may be seen whether or not they possess any quality or qualities to warrant their introduction to gardens; and even should they fail in this respect, there is

still the chance that some of them may be selected for parents, in association with standard varieties, or possibly even in preference to any of these. Some idea can thus be obtained of the immense amount of note-taking which has to be done. During the Strawberry season, it is not too much to say that at Bedford there is judging to be done, and comparisons to be made, every day.

It is seldom that the raiser of new plants or fruits is rewarded for countless failures by such an acquisition as Royal Sovereign Strawberry (fig. in *Gardeners' Chronicle*, July, 1896, and June, 1898) has proved to be. Probably this variety has increased the fame of Messrs. Laxton more than any variety the firm has raised, for not only does it appear to be cultivated in every garden, but in some gardens, and for forcing purposes especially, it has displaced almost every other variety. The visitors on Monday, therefore, were much interested by the breadth of plants of the new variety, the Laxton, which gained a First-class Certificate at the last meeting of the Royal Horticultural Society, and which has been described as an improved Royal Sovereign. It was produced by a cross between that variety and the well-known Sir Joseph Paxton. As we looked at the plants in the rows, it was evident that in growth the new variety resembles Royal Sovereign, but the shape of the fruits is more like those of the variety Sir Joseph Paxton. There can be no doubt that The Laxton has firmer flesh and deeper colour than Royal Sovereign, and its fruits rather earlier, whilst in habit of growth, freedom to crop, and in size of berry, it is more than its equal. It was this variety that attracted most interest amongst the new varieties that have yet been named; but there were many very promising varieties amongst more recent crosses, which are sure to be heard of in the future. The parents in some of these cases were Royal Sovereign \times British Queen, Vicomtesse Héricart du Thury \times James Veitch, which has produced a variety remarkable for strong growth, heavy crop, good flavour, and rich colour; Monarch \times Sir Jos. Paxton, the fruits of which are exceedingly bright scarlet; Sir Jos. Paxton \times Noble, Scarlet Queen \times John Ruskin, Early Laxton \times La Grosse Sucrée, &c. It would serve no purpose to describe these crosses more fully here, because not having been given names, it would be difficult to identify them in the future. Much of interest, however, might be written respecting the trials of Strawberries already in gardens, old and new varieties, from many raisers, and inclusive of some exceedingly old sorts that are nowadays so seldom seen. The pressure upon our space compels us to allude to these very briefly. President and Keen's Seedling are still cherished by those who seek the highest flavour in Strawberries; British Queen also remarkable for high flavour, is so late that none of the fruits were ripe; John Ruskin has small fruits, but they also possess very good flavour; Stevens' Wonder is a good cropper, but the fruits are too soft—a fault always to be avoided in the raising of new Strawberries; McMahon is a dwarf-growing variety that generally succeeds best in the North; the old Vicomtesse Héricart du Thury (fig. in *Gardeners' Chronicle*, June 22, 1895, fig. 118), is one of the best of the old kinds; Dr. Hogg, A. F. Barron, and many other varieties renowned for good flavour but seldom cultivated, because of their indifferent habit, are growing at Bedford side by side with modern varieties raised by Messrs. Laxton, such as Trafalgar (fig. in *Gard. Chron.* June 23, 1900), Sensation, Leader, Mentmore, and Fillbasket, the last-named being one of the freest cropping Strawberries we have seen.

The continental variety Louis Gauthier is deserving of remark. It is a good cropper, and is perfectly distinct. The fruits are large, and of pale flesh colour, the flavour of them being excellent, and the texture good. The perpetual-fruiting Strawberries St. Joseph and St. Antoine de Padoue (fig. 14 in *Gardeners' Chronicle*, July 28, 1900), were fruiting freely, and the flavour of each was capital.

In the afternoon Messrs. Laxton drove the company, which numbered nearly forty persons, to the experimental fruit farm of the Duke of Bedford at Ridgmont, a garden of the greatest interest, and many wished that there had been more time for examining the features there described to them by Mr. R. Lewis Castle, but which have been recorded on former occasions.

MR. THOMAS H. COOK.

TILL now, gardener to the Earl of Wemyss, Gosford House, Longniddry, has been appointed by His Majesty the King to be his gardener at Sandringham. Mr. Cook, we believe, is in his thirty-third year, and consequently quite a young man for so responsible a position. He has been nearly ten years at Gosford, to which gardens he went as foreman, but for quite seven and a half years he has held the position of head, having been appointed thereto on the death of Mr. Brown, the previous head gardener. Mr. Cook is an Irishman by birth, though his parents are English. He was engaged at The Paradise, Monmouth, whence, after a short stay, he passed



MR. THOMAS H. COOK,
HIS MAJESTY'S GARDENER, SANDRINGHAM.

into the gardens at Cardiff Castle, where he stayed five years under Mr. Pettigrew, who sent him to Mr. Garrett, Whittingham, Prestonkirk, as foreman of the outdoor departments, passing thence to Gosford in 1891. Mr. Cook is well known as an exhibitor at the Royal Caledonian Society's shows in Edinburgh, and also at the county town of Haddington, where the East Lothian Society holds a good flower show annually. Mr. Cook, since his arrival in Scotland, has conformed so strictly to Scottish ways as to have become almost a Scotsman. He is a bowler, a golfer, and when weather permits, a curler; and shortly succumbed to the charms of Scottish beauty, having married a Scotswoman, with whom all who know him most earnestly wish him a happy and successful career at Sandringham.

Mr. Cook's name was one of the four chosen by the Parks Committee of Edinburgh to lay before the Town Council, when Mr. McHattie was chosen to that post early in the present year.

Obituary.

JAMES NAYLOR.—On Wednesday, June 19, there died at his residence at the nurseries, Roxeth, Harrow, at the age of seventy-four years, Mr.

James Naylor, an old and respected resident at Harrow, and a good specimen of the self-made, successful nurseryman. Mr. Naylor was born near Bakewell, in Derbyshire, and after serving his time in good gardens, in the days when learning the business meant hard and rough work in its earliest stages, he came to Harrow as head gardener to Mrs. Holt about forty years ago. About thirty-four years since he purchased the ground on which the nursery now stands, and from that time it has been the site of the most important nursery in Harrow, and at present a valuable property apart from its uses as a nursery. Mr. Naylor leaves three sons, all well known in the nursery trade, and who will arrange to carry on the business.

SOCIETIES.

ROYAL HORTICULTURAL. Scientific Committee.

JUNE 18.—*President*: Dr. M. T. Masters, F.R.S., in the Chair; Messrs. Druery, O'Brien, Chapman, Saunders, Michael, Houston, Gordon, Holmes, Drs. Müller and Cooke, Professor Church, Revs. G. Engleheart, W. Wilks, C. Wolley-Dod, and G. Henslow (Hon. Sec.). Visitor, M. H. Correvon, Geneva.

Abies and Picea hybrids.—Dr. MASTERS exhibited, from M. Moser, of Versailles, four specimens, all different, the result of a cross between *A. Pinsapo* and *A. Nordmanniana*, and one specimen between *Picea ajanensis* and *P. nigra* var. *Doumeti*. This is remarkable for having the stomata on the upper side of the leaf, in correlation with the habit of the leaves lying horizontally with the upper surfaces downwards. The descriptions will be published in full in the Society's *Journal*.

Cornflowers Diseased.—Mr. J. LAWS sent specimens of *Centaurea cyanus* badly afflicted with "rust." Dr. COOKE reported upon it as follows:—"Plants of *Centaurea cyanus*, covered with rusty spots on leaves and stems, were sent to the committee in a deplorable condition. This fungus, as far as present experience goes, is the same as that which attacks *Chrysanthemums*, and is called *Uredo Hieracii*. Plants in the condition sent should at once be rooted up and burnt. It will be well understood how dangerous it would be to have such a pest in the neighbourhood of *Chrysanthemums*, and probably others of the *Compositae*, to say nothing of the *Cornflowers* themselves."

Potamogeton crispus.—Mr. MARK WEBSTER described a pond infested by this Pondweed. Cutting it down with a scythe, as practised, would only tend to propagate it still more. Mr. Correvon observed that the only method, as adopted in Geneva, to keep the Water Thyme, *Elodea canadensis*, in check, was to clear out the pond once in three years. Other members suggested the introduction of water snails, especially *Lymnaea stagnalis*, and species of *Planorbis*.

Dendrobium dimorphum.—Mr. R. YOUNG, of Liverpool, sent a flower having only two petals and two sepals, a not uncommon form.

British Orchids.—Mr. BOWLES sent specimens of *Liparis Loeselii*, as well as both white and pale varieties of *Orchis latifolia* var. *incarnata*, from Horning, Wroxham. The former is interesting, as showing the commencement of the inversion of the lip in *Orchids* generally. This petal is in *Liparis* at first erect and posterior, but then lies flat, so that an insect readily stands upon it. In *Ophrys* the lip becomes pseudo-anterior, by the flower simply bending over to the opposite side of the plant. In other *Orchids* the false anterior position is due to a twist of the pedicel, as in *Listera*, or else of the inferior ovary, as in *Orchis*. Mr. BOWLES observes that the "*Liparis* is still plentiful at Horning, but owing to its dwarf stature, and the boggy nature of the ground in which it grows, it is easily overlooked. It thrives wonderfully well in an artificial bog made of Jadoo in my rock garden. The white form of *O. latifolia* is very abundant, large patches sometimes occurring. *Listera ovata* (Twayblade) and *Ophio-glossum vulgatum* also occur in a 'dancing bog,' and grow very large. I also send an albino *Pedicularis palustris*."

Tomatoes attacked by fungus.—Mr. G. E. DAV sent specimens diseased with *Macrosporium Lycopersici*. It was in the young state. The best remedy is spraying with Bordeaux Mixture in an early stage of growth.

Asplenium trichomanes, var.—Mr. DREERY showed a plant of this Fern which had several fronds partially bipinnate. It was found in Wales. It was interesting as exemplifying an attempt of a normally pinnate species to assume the form of an exotic one. The variety so far did not approach the incised section, which varies on quite different lines.

Poppyer Rhoeo, var.—Mr. DREERY also showed flowers of a Poppy having an intense crimson colour, a native of Asia Minor. They were raised from seed brought from Smyrna,

and have been growing for two years spontaneously in a garden at Acton. Each petal had a small black spot or line at the base.

Teach blist.—Dr. BONAVIA sent leaves badly attacked by this common disease, *EXOASIS deformans*.

Apple bark, threads on.—Mr. F. MARSH READ sent a piece of Apple bark covered with golden twisted threads. He observes that "the main stem for about 6 feet from the soil is 'ribboned' with it." Dr. COCKE reports upon it as follows:—"Portions of the bark of living Apple-trees were sent for information. The bark was covered with long yellow filaments, thin as a hair, and much contorted and interwoven together, presenting a very singular and conspicuous appearance. Upon examination a number of compound cells may be seen in the bark, each with an external orifice, from which the golden tendrils protrude. These filaments are composed of myriads of very minute conidia, or spore-like bodies, adhering to each other as they exude, and are at first soft and flexible, but soon, on becoming dry, the filaments are brittle and horny, or hair-like, variously twisted and contorted, and little thicker than a human hair. The number of very minute spore-like bodies composing each filament must be enormous (each 5 micromillimetres long, and slightly curved). The fungus has long been well known on Pomaceous trees, but we have not met with it before upon living bark. It is known as *Cytospora carposperma*. Later on, the same pustules are occupied by a *Sphaeriaceus* fungus, which is believed to be the ultimate development of this dimorphous organism, and in this condition each pustule consists of a few flask-like conceptacles or perithecia with rather long converging necks. These perithecia enclose numerous delicate cylindrical sacs, or aeci, each containing eight sausage-shaped sporidia (16 to 18 by 3 to 4 mm.), nearly of the same shape as the minute conidia, but many times larger, in which condition the fungus is known as *Valsa ambiens*, and has been found on Pear and Apple, but also on Maple, Beech, Hazel, Alder, Plum and Cherry, Elm, Oak, Hawthorn, Poplar, Chestnut, Lime, and even on Rose. Hence it is widely diffused and well known. It would be a dangerous enemy if once it became established as a parasite on living fruit-trees. The mature condition may be found late in the autumn, in the winter, and the early spring."

Gloire de Dijon Rose Proliferous.—Mr. CHAPMAN exhibited flowers having their centres occupied by a green tuft of leaves, &c. He observes that of about two dozen plants, the whole of the flowers this year, and for several years previously, have developed the peculiarity.

Birch-tree Bark Diseased.—Mr. A. WALKER, of The Croft, Needham Market, Suffolk, sent some specimens, which Mr. SAUNDERS undertook to examine.

Cattleya Mendeli malformed.—Flowers were sent by Sir TREVOR LAWRENCE, as well as of *Odontoglossum crispum*, which Dr. MASTERS undertook to report upon.

Thistle fasciated.—Mr. HOUSTON showed an abnormally large specimen of this common monstrosity.

Chiswick, June 20.

At the meeting of the Fruit and Vegetable Committee held here on the above date, there were present:—Mr. Balderson in the Chair; and Messrs. G. Wythes, W. Bates, W. Pope, J. Wright, J. Smith, J. Willard, A. Ward, H. Esling, J. W. Gleeson, C. Help, and A. Dean.

The subjects to be examined were early Peas and Lettuces. The trial of Peas is, this year, the best ever seen at Chiswick, and Mr. S. T. WRIGHT and his men are entitled to the highest praise. There were some ninety-four rows and varieties, early and late, very dwarf and tall, as well as others intermediate. This remarkable effect is doubtless largely due to the heavy rains which fell early in April, although the rain-gauge book shows that from April 10 to June 20, a period of nine weeks, only three quarters of an inch of rain had been recorded. About fifteen of the earlier Peas were inspected, and Awards of Merit made to Sutton's Harbinger, fifteen inches in height, pods blunt, very full, and of capital quality. Sutton's Ideal, a 4 feet Pea of great merit, showing capital cropping qualities, and exceeding earliness; and to the same firm, Duchess of York, 5 feet high, having large well filled pods, and Peas exceptionally sweet. Awards were made to Laxton's Ameer, a fine early Pea, well known, but not previously honoured; and Carter's Edward VII., having 4 feet high, pods green, fine, well filled, and of capital quality. All were sown March 14. Awards of Merit were also given to Lettuces, St. Albans Hall, a very green, compact Cos; to Early Perfection, much like the preceding, but a little earlier, and having more pointed leaves; and to Continuity, from two firms; to a reddish-leaved form of the Cabbage variety Tom Thumb, for frame culture; to Big Boston, a fine green-headed Cabbage form; and to Little Gem, rather larger than Tom Thumb, and of whiter leafage.

CROYDON AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT.

JUNE 18.—There was a good attendance at the meeting held in the Society's Room at the Sunflower Temperance Hotel on the above date. Six new members from Reigate, Caterham,

and Sydenham were elected. The chairman, Mr. W. J. SIMPSON, introduced Mr. Harry Boshier, who read a paper on "Vegetables for Exhibition," for which he was accorded an unanimous Vote of Thanks. The subject for next meeting on July 16 will be "Winter-flowering Pelargoniums." J. G.

NATIONAL ROSE.

(Southern Exhibition.)

JUNE 26.—The National Rose Society has commenced the season of 1901 well. There was an excellent show at Richmond on Wednesday last, and the local Society provided a spacious marquee, 210 feet by 50 feet, for the display of the Roses, so that there was not the slightest need for crowding them together.

The Richmond Horticultural Society itself, always gets together a good exhibition of Roses, and it is only natural that the National Society should occasionally visit that popular and energetic suburb of the metropolis, even though some think that it would be more appropriate to hold a metropolitan exhibition there than a "southern one."

There are great expectations in the Rose world in respect to the metropolitan exhibition that will be held in the Temple Gardens next week, and at Richmond the feeling was freely expressed that it will prove to be an unique event in the Society's history. The Richmond show was only a foretaste of that display, but it is entitled to notice for its own merit, albeit it was held under the "shadow" cast by the "coming event."

Of course the southern growers had it pretty much their own way at Richmond, but there are not now the same conditions as used to obtain, because most of the trade growers whose establishments are in the northern counties have been compelled to acquire land also in the south.

In the classes generally there was good competition, and the Medal Roses in each case were worthy of these awards. We thought that the variety Maman Cochet, always a good Rose, was better shown even than usual, at any rate in points of size and substance; and it would be easy to instance other varieties that showed to good advantage.

There were several new Roses at the show, and the Society's Gold Medal was awarded to a H.P. named Ben Cant, shown by Messrs. B. R. CANT & SONS, Colchester, which will be found described below. It will be useful to amateurs in affording colour to their collections for exhibition. The Society's Card of Commendation was awarded to a single-flowered garden variety, of deep red colour, named The Lion, and shown by Messrs. PAUL & SON, the Old Nurseries, Chesham.

The arrangements were very good, and Mr. Mawley, whose courtesy and help we have frequently to acknowledge, found good assistants in the officers of the Richmond Horticultural Society.

MIXED ROSES.

Forty-eight distinct varieties, three blooms of each.—The 1st prize in this class consisted of the "Chancellor" Challenge Cup and a sum of £6. From three other exhibitors Messrs. B. R. CANT & SONS, Colchester, won 1st prize, and we append the whole of the varieties in this fine collection:—Madame Eugénie Verdier, Bridesmaid, Medea, Le Havre, Marchioness of Downshire, Chas. Lamb, Duke of Wellington, Souvenir d'un Amie, Marie Baumann, Mrs. W. J. Grant, Souvenir de S. A. Prince, Comtesse de Ludre, Comtesse de Nadaillac, Mrs. J. Laing, Susanne-Marie Rhodocanachi, White Maman Cochet, Marquise Litta, White Lady, Bessie Brown, Fisher Holmes, Helen Keller, Madame Delville, Muriel Grahame, Rev. Allan Charles, A. K. Williams, Beaute de l'Europe, Auguste Rigotard, Golden Gate, Tom Wood, K. A. Victoria, Lady M. Fitzwilliam, Mme. de Watteville, Marie Verdier, Chas. Lefebvre, Mrs. Sharman Crawford, Souvenir d'Elise Vardon, Victor Hugo, Madame Cadeau Ramey, Gustave Piganneau, Dr. Sewell, Madame Gabrielle Luizet, Dupuy Jamain, Countess of Caledon, Madame Cusin (very fine in size and form, but rather pale in colour), Duke of Edinburgh, The Bride, Comte de Raimbaud, Mrs. Cocker, and Ulrich Brunner. Messrs. D. PRIOR & SON won 2nd prize with an even collection of good blooms; and Messrs. FRANK CANT & CO. were 3rd.

Twenty-four blooms, distinct varieties.—There was very good competition in this class, and Messrs. HARKNESS & SONS, Bedale and Hitchin, won 1st prize. They included some first rate blooms, especially the following:—Gustave Piganneau, Bessie Brown, Comtesse de Nadaillac, Dupuy Jamain, Mrs. John Laing, Mrs. W. J. Grant, Horace Vernet, The Bride, Victor Verdier, &c. 2nd, Mr. CHAS. TURNER, Royal Nurseries, Slough. In this stand was an excellent bloom of Bessie Brown, and other noteworthy ones were Mrs. John Laing, Duke of Wellington, &c. 3rd, Messrs. J. BURRELL & CO., Howe House Nurseries, Cambridge. There were eight exhibitors.

Twelve blooms of any Rose, except T. or N.—The best shown Rose in this class was Mildred Grant, a large, pale coloured Rose, with fine petals, and shown by Messrs. ALEX. DICKSON & SONS, Newtownards, Co. Down, Ireland. The well known

Mrs. John Laing, from Messrs. D. PRIOR & SON, was 2nd. There were ten collections.

For prizes offered by the Mayor of Richmond for a collection of twenty-four Roses (trebles), the Messrs. B. R. CANT & SONS were most successful; Messrs. PRIOR & SON, and Messrs. FRANK CANT & CO. following.

There were several other classes in which special prizes were offered.

Amateurs.—Twelve single trusses, distinct.—There were twelve exhibits in this class, and the 1st prize was won by O. G. ORPEN, Esq., West Bergholt, Colchester. His best bloom was one of Maman Cochet, which was large in size; the other specimens were Marquise Litta, Madame Cusin, Her Majesty, Comtesse de Nadaillac, Souvenir d'un Amie, Maréchal Niel, Mrs. W. J. Grant, Mrs. John Laing, Souvenir de S. A. Prince, Bridesmaid, and Muriel Grahame; all of these were very fine indeed. 2nd, E. B. LINDSELL, Esq., Hitchin. His best flowers were Mrs. W. J. Grant, Bessie Brown, Ernest Metz, Mrs. Mawley, &c.; 3rd, Mrs. HAYWOOD, Woodhatch Lodge, Reigate (gr., Mr. Salter).

Twenty-four blooms, distinct varieties.—Of five competitors in this class the most successful was E. B. LINDSELL, Esq., and amongst his blooms were noticed attractive specimens of Mrs. John Laing, Maman Cochet, Mrs. W. J. Grant, Dupuy Jamain, Muriel Grahame, La France, and White Lady. The Rev. J. H. PEMBERTON was 2nd, but his flowers were much smaller in size, though there were pretty trusses of Marquise Litta, Madame Cadeau Ramey, and Duchess of Bedford; 3rd, ALFRED TATE, Esq., Leatherhead.

The best collection of eighteen blooms distinct, from growers of fewer than 2,000 plants, was from R. FOLEY HOBBS, Esq., Thornloe, Worcester. In this collection we noticed fine blooms of Madame G. Luizet, Mrs. W. J. Grant, Horace Vernet, Madame Jules Grolez, &c.; 2nd, E. M. BETHUNE, Esq., Horsham, Sussex; 3rd, P. G. C. BURNAND, Esq., Hill Grange, Reigate.

Among growers of fewer than 1,000 plants, the best collection of twelve blooms was from W. KINGSTON, Esq., 52, Waterloo Road, Bedford. There were noteworthy blooms of Marquise Litta, Ulrich Brunner, Horace Vernet, Mrs. John Laing, &c.; 2nd, GEO. MOULDS, Esq., Hitchin; and 3rd, F. WELLESLEY, Esq., Westfield, Woking (gr., Mr. J. Gilbert). There were as many as nine exhibitors in this class.

Of growers of fewer than 500 plants, the best collection of six blooms was shown by R. W. BOWYER, Esq., Hertford Heath, Hertford.

Six blooms of any Rose other than T. or N.—This was open to all amateurs, and the 1st prize was won by the variety Kaiserin Augusta Victoria, exhibited by BEATRICE H. LANGTON.

TEAS AND NOISETTES

were shown quite as well as the H.P.'s, and in the classes devoted to them there were some very fine flowers.

Twenty-four blooms, distinct varieties.—Messrs. D. PRIOR & SON won 1st prize in this, the largest class for Teas and Noisettes, and included a remarkable bloom of Maman Cochet, good in size, form, and very fresh in appearance. Other good blooms were Cleopatra, The Bride, Bridesmaid, Madame de Watteville, Mrs. Ed. Mawley, Comtesse de Nadaillac, Madame Cusin, Niphotos, Catherine Mermet, and Muriel Grahame; 2nd, Mr. GEO. PRINCE, who also showed very well; 3rd, Messrs. FRANK CANT & CO. There were five exhibitors.

Collection of twelve blooms, distinct.—JOHN MATTOCK, Esq., New Headington, Oxford, won 1st prize in this class, and staged the following varieties:—Maman Cochet, White Maman Cochet, Medea, Ernest Metz, Bridesmaid, Catherine Mermet, Madame Hoste, Souvenir d'Elise, Marie van Houtte, Hon. Edith Gifford, The Bride, &c.; 2nd, Mr. CHAS. TURNER, who had noteworthy specimens of Comtesse de Nadaillac, Maman Cochet, and Bridesmaid; 3rd, Messrs. J. BURRELL & CO., Cambridge.

The class for twelve distinct varieties (trebles) was won by Mr. GEO. PRINCE, and the varieties Catherine Mermet, Comtesse de Nadaillac, The Bride, Madame Cusin, Maman Cochet, and Monsieur Furtado, were the best trios; 2nd, Messrs. B. R. CANT & SONS, whose blooms of Madame Cusin were very pretty; 3rd, Messrs. D. PRIOR & SON. There were four exhibitors.

Twelve Blooms of any one variety.—The variety that won premier place in this class was the lovely-tinted Madame Cusin, Messrs. B. R. CANT & SONS showing specimens of considerable merit. Comtesse de Nadaillac, from Mr. GEO. PRINCE, Longworth Nurseries, Oxford, was 2nd; and Maman Cochet, from Messrs. D. PRIOR & SON, was 3rd.

Amateurs.—O. G. ORPEN, Esq., West Bergholt, Colchester, won the 1st prize for eighteen blooms, distinct varieties, amongst which we noticed those following:—Maman Cochet, Mrs. Pierpont Morgan (very pretty), Comtesse de Nadaillac, Muriel Grahame, Madame de Watteville, Ernest Metz, and White Maman Cochet; 2nd, the Rev. F. R. BURNSIDE, Great Hambridge Rectory, Rochford, Essex; 3rd, E. M. BETHUNE, Esq., Denne Park, Horsham.

Among growers of fewer than 500 plants, a 1st prize was won by Rev. W. POWLEY, Upton Scudmore, for twelve blooms, distinct varieties. Those following were particularly good:—Madame Cusin, Madame de Watteville, and Mrs. E. Mawley; 2nd, F. WELLESLEY, Esq., Westfield, Woking.

R. W. BOWYER, Esq., Hertford, had 1st prize for six blooms, among growers of fewer than 200 plants.

Six distinct varieties (*trebles*).—This class was open to all amateurs, and the Rev. F. R. BURNSIDE won 1st prize; his best *trebles* were Maman Cochet and Comtesse de Nadaillac; 2nd, O. G. ORPEN, Esq., West Bergholt, Colchester; 3rd, E. M. BETHUNE, Esq.

Six Blooms of one variety.—The Rev. F. R. BURNSIDE won 1st prize with White Maman Cochet; 2nd, E. M. BETHUNE, Esq., with Sylph. This class was also open to all amateurs.

GARDEN OR DECORATIVE ROSES.

The first show of the season very frequently proves to be one at which the garden Roses are shown best, and on this occasion they were really fine, the three collections in the large class being of exceptional merit.

Thirty-six distinct varieties, not fewer than three trusses of each.—The maximum amount of space permitted each exhibit in this class was 12 ft. by 3 ft. There were three exhibitors in this class, and the 1st prize was awarded to Messrs. PAUL & SON, Cheshunt, Herts, for a collection of large, bold bunches of fresh, well-coloured flowers. We cannot give the names of all the varieties in this stand, but the following may be taken as instancing those that first attracted the eye:—R. Polyantha simplex, Wallflower, a large double red flower, with Rambler habit of growth; Marquise de Salisbury, Old Rose of York, large single white, with delightful yellow anthers; l'Idéal (N.), Anne of Gierstein, single pink (Penzance Briar), Lady Battersea (H. T.), Rosa Wichuriana, Pink Roamer, Madame Pernet Ducher (H. T.), Madame Pierre Cochet, double Noisette, yellow; and several of the Province and Moss Roses, making a capital exhibit. 2nd, Mr. JNO MATTOCK, Headington, Oxford, whose exhibit was also very good, and remarkable for grand bunches of Madame Jules Grolez, W. A. Richardson, Papillon, Carmine Pillar, Janet's Pride, and others. Messrs. GEO. COOLING & SONS, Bath, though 3rd, exhibited a collection of flowers of good quality and much interest.

The smaller class for eighteen bunches was won by Mr. GEO. PRINCE with delightful bunches. The large semi-double, brilliant red-coloured Bellefleur was charming, and Janet's Pride, W. A. Richardson, Clair Jacquier, Rosa moschata alba, and others, attracted much notice. Messrs. FRANK CANT & Co., Braiswick Nurseries, Colchester, were 2nd; and Mr. CHAS. TURNER, Royal Nurseries, Slough, 3rd.

The best collection of twelve single-flowered Roses (one row of petals only), in bunches, was shown by Messrs. FRANK CANT & Co; and the best of these were R. moschata alba, R. macrantha, R. rugosa alba, R. r. caloparpa (red), and Hybrid Sweet Briar Lucy Ashton. 2nd, Mr. CHAS. TURNER, in whose exhibit we noticed fine bunches of the brilliant Royal Scarlet and of Lady Penzance Sweet Briar; 3rd, Messrs. GEO. COOLING & SONS.

Amateurs.—Twelve distinct varieties.—The 1st prize collection in Class 23 was shown by ALFRED TATE, Esq., Downside, Leatherhead (gr., Mr. W. Mease), who had fine bunches staged on shelves covered with black velvet. The following varieties were most represented:—Macrantha, Reine de Wurtemberg, Rose Moschata niva, Crimson Rambler, Boule de Neige, Gustave Regis, Carmine Pillar, Perle d'Or, Bardon Job, Ma Capucine, Camens, and W. A. Richardson; 2nd, Rev. J. H. PEMBERTON, (Havering-atte-Bower, Essex, Rosa multiflora grandiflora, R. rugosa fimbriata, and Lady Penzance, Sweet Briar were very pretty in this collection.

The best collection of six varieties was shown by BEATRICE H. LANGTON, Raymead, Hendon, London; and the pretty pink-coloured single Rose Jeannie Deans was shown finely in this group; whilst William Allan Richardson afforded some beautiful colour; 2nd, ED. MAWLEY, Esq., Rosebank, Berkhamstead, whose bunch of Rosa multiflora simplex was very attractive.

Local Classes.—JAMES WIGAN, Esq., Cromwell House, Mortlake, won a class for eighteen blooms of distinct varieties of Roses (any section); and Sir F. WIGAN, Bart., Clare Lawn, East Sheen (gr., Mr. C. Want), was 2nd.

The best collection of twelve blooms was from Mrs. C. WINCH, Sunnyside, Petersham.

Other winners of 1st prizes in the local classes included Mrs. H. HARBIRD, 39, Raleigh Road, Richmond.

NEW ROSES.

The Society's Gold Medal was awarded to a new H.P. shown by Messrs. B. R. CANT & SONS. It was named Ben Cant, and is deep red or crimson in colour, of moderate size and substance. A Card of Commendation was awarded to a new single Rose, colour rosy-crimson, shown by Messrs. PAUL & SON, The Old Nurseries, Cheshunt, and named The Lion. This is a large flowered Rose, and its brilliant colour will be sure to make it valuable.

MEDAL ROSES.

The Silver Medals for the premier single blooms in each section in the show were awarded to the following varieties:—In the nurseryman's section, Mildred Grant (H.T.), shown by Messrs. A. DICKSON & SON; Mrs. Jno. Laing (H.P.), shown by Messrs. PRIOR & SON; and Maman Cochet (T.), also shown by Messrs. PRIOR. In the amateurs classes, La France (H.T.), shown by G. A. HAMMOND, Esq., Cambrian House, Burgess Hill, in an exhibit that obtained no award in its class; Mrs. Jno. Laing (H.P.), shown by O. G. ORPEN, Esq.; and Maman Cochet (T.), also from Mr. ORPEN.

RICHMOND HORTICULTURAL.

JUNE 26.—The twenty-seventh annual show of this Society was held in the Old Deer Park on Wednesday last. Last year the Royal Horticultural Society honoured Richmond by holding a meeting of its Committees there in conjunction with the Show, and this year Richmond had the National Rose Society for its guests. The Roses shown, therefore, on the occasion under notice are referred to in our report of the National Rose Society. The exhibits of the Richmond Society, apart from the Roses, were displayed in four large tents, and the Show was as full and as good, probably, as the Society has yet held. Table decorations were accommodated in a tent by themselves, and were very good. The Fruit was noteworthy for so early a date of the season, and was shown in considerable quantity. It is surprising how heartily the Richmond Society is each year supported by the trade, and by amateurs who exhibit honorary collections of plants and flowers. On Wednesday last there were two Gold Medals, besides many of lesser value, awarded to such exhibits.

There are several gentlemen on the Committee who have great interest in the Royal Gardeners' Orphan Fund, and a tent is filled with flowers, &c., presented by exhibitors and others, which are afterwards sold for the benefit of that charity. Mrs. KING, wife of the Hon. Sec., has rendered great service in managing these sales. The arrangements of the Show were good, and Mr. KING is entitled to congratulation for the results obtained.

MISCELLANEOUS GROUPS AND SPECIMEN PLANTS.

The 1st class is one for a group of plants arranged for effect on a space not exceeding 100 sq. ft. Mr. H. E. FORDHAM, The Nurseries, Twickenham, won 1st prize for a very pretty arrangement in which his fine foliage plants were lit up with well-flowered Gloxinias, Cattleyas, Hydrangea Hortensis, Liliun longiflorum Harrisii, Tuberoses, Cannas, Carnations, Kalanchoe flammea, and Gypsophylla. 2nd, C. SWINFEN EADY, Esq., Oatlands Lodge, Weybridge (gr., Mr. W. Lock). In this case the exhibitor had introduced a rustic arch, a feature of larger groups, but the effect was not so good as in the arrangement already noticed.

The class for a smaller group of plants was won by Sir F. WIGAN, Bart., Clare Lawn, East Sheen (gr., Mr. Want).

ANDREW PEARS, Esq., Spring Grove, Isleworth (gr., Mr. W. Farr), won a class for six Stove and Greenhouse Plants, showing good specimens of well-known species.

There were numerous collections of Coleus shown, and the 1st prize for six plants was won by E. M. BARTLETT, Esq., Uplands, East Sheen (gr., Mr. H. Hicks); 2nd, Miss COLES, Hedingham House, Twickenham (gr., Mr. J. Sallows). There were several unsuccessful exhibitors of these plants.

The best collection of nine Gloxinias, and of a group in Messrs. SUTTON & SON's class were shown by MAX WAECHESTER, Esq., Terrace House, Richmond (gr., Mr. F. Wyatt).

Tuberous Begonias were best shown by D. H. SCOTT, Esq., The Old Palace, Richmond (gr., Mr. R. Johnson), and J. B. HILDITCH, Esq., Asgill House, Richmond (gr., Mr. A. Meaton), was 2nd. The plants in the 1st prize collection bore fine flowers, but there were more stakes than are desirable.

The only exhibitor of six show or decorative Pelargoniums was Mr. CHAS. TURNER, Royal Nurseries, Slough, but he had very good specimens of the varieties Magpie, Royal Ascot, Excellent, Spotted Beauty, Mr. Coombs, and Duke of Norfolk.

The zonal Pelargoniums made a much greater show, and for six plants of these the most successful exhibitor was again H. LITTLE, Esq., and he had plants three feet across and well flowered, but scarcely so good as were shown so numerous at York.

Mr. TURNER, of Slough, was also the only exhibitor of fancy, Pelargoniums, and, but for his large, well-trained plants covered with bright, curiously marked flowers, these attractive plants would not have been represented. First prize was given the group as a matter of course.

The best collection of six Orchids came from H. LITTLE, Esq., Baronshalt, East Twickenham (gr., Mr. A. Howard). He had excellent specimens of Vanda teres and Cymbidium Lowianum. His other plants were Cypripedium superbiens, Cattleya Gaskelliana, Laelia tenebrosa, and Cattleya Mendeli. Sir FRED. WIGAN, Bart., Clare Lawn, East Sheen (grower, Mr. W. H. Young), was 2nd, and showed Laelia Cattleya Arnoldiana with seven flowers, Cattleya Mossie, In Memoriam R. Carnow with nine flowers; L.-C. Canhamiana marginata, with seven flowers; L.-C. x Lanthus, with nine flowers; Cattleya gigas with nine flowers; and Epidendrum prismatocarpum, with nine flower-spikes.

The 1st prize for a group of six Ivy-leaved Pelargoniums was won by H. LITTLE, Esq. He had six good plants, about 3 feet high. The best varieties were Honeymoon, rose-

coloured, Galilee and Masinette; 2nd, H. T. MICHELS, Esq., Farleigh House, Kingston (gr., Mr. G. Hughes).

For a collection of six exotic Ferns, distinct, the 1st prize was won by Lady TATE, Park Hill, Streatham Common (gr., Mr. W. Howe). His group included good plants of Davallia Fijensis, Nephrolepis exaltata, Adiantum cuneatum, Davallia Mooreana, Microlepia hiata cristata, &c. A. PEARS, Esq., was 2nd.

A limited class for six exotic Ferns was won by Sir F. WIGAN, Bart., Clare Lawn, East Sheen (gr., Mr. C. Want). He had a very finely-coloured plant of Adiantum tenerum roseum.

Six very fine Caladiums were shown by C. M. BARTLETT, Esq., Uplands, East Sheen (gr., Mr. H. Hicks), and he very easily won 1st prize from W. CUNARD, Esq., who had also a collection of six plants.

Lady TATE won 1st prize for a collection of six fine foliage plants, distinct, exhibiting very commendable plants of well-known species.

ANDREW PEARS was awarded a 1st prize for a group of Malmaison Carnations.

The best single specimen fine foliage plant was declared to be a plant of Nepenthes Mastersianum, some seven or eight feet high, with foliage to the base, and carrying about twenty good pitchers. It was exhibited by C. SWINFEN EADY, Esq., Oatlands Lodge, Weybridge (gr., Mr. W. Lock).

The best collection of Lilliums in pots was shown by MAX WAECHESTER, Esq., Terrace House, Richmond (gr., Mr. F. Wyatt). He had excellent plants of varieties of L. auratum and L. longiflorum.

TABLE DECORATIONS, CUT FLOWERS, &c.

There was a grand display of Table Decorations, Bouquets, and other florists' exhibits, for which 1st prizes were obtained by Miss N. H. COLE, The Vineyards, Feltham; Mrs. SUTTON, The Gardens, Whithead, Farnham; Miss A. TRUSSLER, Twickenham Nurseries; BERNARD WEGUERLIN, Esq., Coombe End, Kingston Hill (for prizes offered by Mr. R. SYDENHAM for Sweet Peas); and Messrs. PERKINS & SONS, Coventry, who are so renowned for such exhibits. There were also collections of cut herbaceous and other flowers, to which we are unable to refer in detail.

FRUITS AND VEGETABLES.

The 1st prize for a collection of fruit, including six dishes, was obtained by the Right Hon. Earl of DYSART, Hain House, Petersham (gr., Mr. T. F. Conway). His Grapes Foster's Seedling and Black Hamburg were capital, and Montmore Strawberries were large and deeply coloured. The other dishes were composed of Goldoni Nectarines, Hero of Lockinge Melons, Bigarreau Napoleon Cherries. 2nd, W. H. ELLIS, Esq., Clovelly, Hounslow (gr., Mr. W. Ford). He exhibited the same varieties of Grapes as were in the 1st prize collection, and his Royal Sovereign Strawberries and Hale's Early Peaches were very fine. 3rd, L. J. BAKER, Esq., Ottershaw Park, Chertsey (gr., Mr. T. Osman).

Another class for a collection of six dishes of fruit, for special prizes offered by W. CUNARD, Esq., was won by C. SWINFEN EADY, Esq.

The best three bunches of black Grapes were of the variety Madresfield Court, exhibited by the Earl of ONSLow, Clondon Park, Guildford (gr., Mr. H. W. Blake). One bunch of these especially was very fine. 2nd, Black Hamburg, exhibited by L. J. BAKER, Esq.; and 3rd, Madresfield Court, from C. SWINFEN EADY, Esq.

Foster's Seedling Grape won the 1st prize for three bunches of a white variety, and they were remarkable bunches that C. SWINFEN EADY, Esq., exhibited. L. J. BAKER, Esq., who won 2nd prize, showed Buckland Sweetwater; and S. C. RAPHAEL, Esq., Castle Hill, Englefield Green (gr., Mr. H. H. Brown), Foster's Seedling.

The best three bunches of Grapes from exhibitors in the Richmond Society's district were shown by the Earl of DYSART, the variety being Black Hamburg.

The best Melon was shown by Sir F. WIGAN, Bart., the variety being Hero of Lockinge; J. WIGAN, Esq., Cromwell House, Mortlake, was 2nd with the same variety.

The 1st prize for a dish of nine fruits of Tomatos was won by W. H. ELLIS, Esq., the variety being Perfection; the Earl of DYSART was 2nd with the same variety.

The best Strawberry in a competition for 80 fruits was Royal Sovereign, shown by Sir F. WIGAN, Bart., and fine fruits he exhibited; 2nd, the same variety from Mrs. H. L. WARDK.

The best collection of two dishes of Strawberries was shown by the Earl of DYSART, and the varieties were Leader and Monarch; 2nd Mr. G. Parker, Providence Cottage, Isleworth with Royal Sovereign, and Latest of All.

The best Nectarines were Early Rivers, from W. CUNARD, Esq.; and the best Peaches Royal George, from G. C. RAPHAEL, Esq.

Only one dish of Figs were shown, and A. PEARS obtained 1st prize for the variety Brown Turkey.

The 1st prize for a brace of Cucumbers was won by Sir F. WIGAN, Bart., the variety being Veitch's Challenger—fine, straight, even, well-coloured specimens.

NON-COMPETITIVE EXHIBITS.

Sir F. WIGAN, Bart., Clare Lawn (grower, Mr. W. H. Young), exhibited a grand exhibit of Orchids, including Epidendrum, Masdevallia Harryana, and M. Veitchi; Odontoglossums, Cattleyas, Laelia-Cattleyas, Miltonias, Phalaenopsis grandiflora, Aerides, Thunias, Lelias, Biphyllyum barbigerrum, Vanda suavis, and Cypripediums (Gold Medal).

LEOPOLD DE ROUSSEUILLE, Esq., Leighton Buzzard (gr., Mr. J. Jennings), exhibited one of the best groups of Souvenir de la Malmaison Carnations ever staged at a local show. There were several plants of the old blush variety, but most of those composing the group were of rich pink colour, similar to the variety known as Princess of Wales (Gold Medal).

Messrs. CANNELL & SONS, Swanley, Kent, exhibited a fine group of Cannas, and were awarded a Silver-gilt Medal.

Messrs. J. CARTER & CO., High Holborn, London, obtained a similar award for one of the finest groups of Gloxinias we remember the Holborn firm to have shown.

Messrs. JAS. VELITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea, were awarded a Silver-gilt Medal for a large group of Roses in pots, and a group of Kalanchoes flammea, &c.

Mr. J. RUSSELL, Richmond Nurseries, exhibited groups of Ivies, decorative hardy shrubs, stove and greenhouse plants, and Codium (Crotons), and was awarded a Silver-gilt Medal.

Messrs. HILL & SONS, Lower Edmonton, London, who obtained an award of the same value as the one above, exhibited a very fine group of Ferns.

SILVER MEDALS were awarded to Mr. W. ICETON, Granard Nurseries, Putney Park Lane, for Palms and other fine foliage plants; T. S. WAKE, LTD., Feltham, for a group of hardy flowers, including the rare *Lilium Grayi*; Messrs. H. LOW & CO., Bush Hill Nurseries, Enfield, for stove and greenhouse plants; Messrs. J. PEAR & SONS, Roupell Park Nurseries, Norwood, for cut hardy flowers and alpine plants; Messrs. YOUNG & CO., Stevenage Nurseries, Herts, for cut hardy flowers; Messrs. BAIR & SONS, King Street, Covent Garden, for cut hardy flowers; Mr. W. RUMSEY, Joyvings Nurseries, Waltham Cross, for Roses; Messrs. T. CRIPPS & SONS, Tunbridge Wells, for Japanese Maples; Messrs. FROMOW & SONS, Chiswick, also for Japanese Maples; Mr. ROBERT GREEN, LTD., 28, Crawford Street, London, for Codium (Crotons); and Mr. W. THOMPSON, Sheen Nurseries, Richmond, for fine-foliage plants and Hydrangeas.

Messrs. JONES & SONS, Shrewsbury, exhibited Sweet Peas in forty-five varieties, in which the new variety "coccinea," the nearest approach to scarlet yet obtained in Sweet Peas. The flowers were of capital colour and quality:—Mars, crimson; Gorgeous, with scarlet standard, and rose-coloured wings; and the Hon. Mrs. Kenyon, pale sulphur colour, in the way of Mrs. Eckford, but with larger flowers, less pale in colour, and said to possess a better constitution. These were the most remarkable varieties, but there were numerous others, representative of better-known varieties.

Messrs. R. H. BATH, LTD., Wisbech, exhibited a collection of cut blooms of Paeonies.

Mr. ROBERT SYDENHAM, Tenby Street, Birmingham, exhibited a collection of two dozen bunches of Sweet Peas, in which the new variety coccinea, and many others of excellent merit, were included; also a group of Spanish Irises in variety, and Carnations, which were shown in the rustic silvered receptacles Mr. Sydenham frequently exhibits.

The above are principal exhibits in the non-competitive section.

ROYAL OXFORDSHIRE HORTICULTURAL.

JUNE 18.—This Society held its seventy-first Commemoration Show in the gardens of New College, Oxford, on the above date, by permission of the Warden and Fellows. These college gardens are *dear ideal spots* for flower shows, "New" being no exception. The weather was favourable, although a cold north wind was blowing. The entries were fewer than usual, owing doubtless to the backward season, but the quality, on the whole, was up to exhibition standard. There were five classes open to all England, and in Class 1, for a group of stove and greenhouse plants arranged for effect, there were but two exhibitors, the premier award going to that redoubtable exhibitor Mr. CYPHER, of Cheltenham, for an excellent group; Mr. VAUSE, Leamington, was 2nd for a good group, but lacking the finish of Mr. Cypher's.

In competition for the best display of Roses, Mr. J. MATTOCK, Headington, was 1st, for an artistically arranged and beautiful display; Mr. WHILLANS, gr. to His Grace the Duke of MARLBOROUGH, Blenheim Palace, being 2nd.

For the best decorated dinner-table there were four exhibits, which made an imposing display, and here again Mr. J. MATTOCK was 1st.

Displays of hardy perennials and Sweet Peas produced effective banks of colour. In the former, Mr. J. JOHNSON was an easy 1st; and Mr. H. DEVERILL, Banbury, 2nd. While for Sweet Peas, Mr. J. WALKER of Thame was 1st.

In the members' classes the groups for effect were most creditable to the exhibitors, Mr. J. JOHNSON of Garsington Nurseries, being an easy 1st.

For a group of Orchids, Mr. J. M. BUSH, gr. to F. J. MYERS, Esq., Banbury, was 1st with a fine lot of well-grown plants.

There was but one lot of Carnations, and that from Mr. WHILLANS, Blenheim, an excellent exhibit.

There were classes for Ferns, stove and greenhouse plants, &c., but they call for no special comment.

ROSES.

Mr. R. E. WEST, of Fifth Dene, Reigate, was 1st for twenty-four and for eighteen; and for eighteen Tea-scented, Mr. J. MATTOCK was 2nd, with a beautiful clean fresh lot of blooms.

FRUIT

was below the usual standpoint of excellence at the Oxford June show.

Mr. W. M. FOSTER-MELLIER, North Aston Hall, was 1st for both black and white Grapes, showing Black Hamburg and Foster's Seedling.

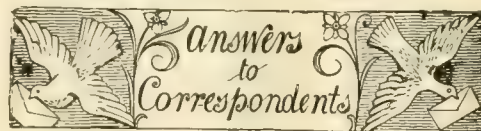
F. J. MYERS, Esq., was 1st for Peaches and Nectarines; PHILIP SOUTHEY, Esq., Bampton, 1st for Melons; and AUBREY HARCOURT, Esq., Nuneham Park, 1st for Strawberries.

VEGETABLES.

These were of splendid quality throughout, and shown in goodly numbers. For a collection of eight varieties, Mr. J. GIBSON, gr. to R. W. HUDSON, Esq., Danesfield, Great Marlow, was an easy 1st for a collection, his Duke of Albany Peas, Eclipse Tomatoes, Magnum Bonum Cauliflower, and Early Gem Carrot were excellent; Mr. C. BROCK, gr. to C. D. BALL, Esq., Witney, was 2nd. For special prizes offered by Messrs. Webb & Son, Stourbridge, Mr. BROCK was 1st, with a good lot; Mr. George Neal, gr. to P. SOUTHEY, Esq., Bampton, 2nd.

Messrs. SUTTON & SONS, of Reading, also offered valuable prizes for a collection of six varieties, and here again Mr. GIBSON was 1st for similar produce as that staged in his other collection. Mr. GIBSON also won for Cucumbers and Tomatoes.

There were also liberal prizes offered for amateurs and cottagers, and a good display was made by them.



BOOKS: P. H. R. The book is of some interest as being the first British flora in the English language issued after Linnaeus' system was established. We do not suppose that its commercial value is more than infinitesimal, but if you wish to dispose of it kindly let us know. Some second-hand bookseller might advise you as to price.—J. C. You do not say which of Miller's books you have. Please send full title.

CAMELLIAS: E. M. Affected with *Coccus flocciferus*. See *Gardeners' Chronicle*, December 8, 1877, p. 726. Burn the affected shoots, and try petroleum emulsion with care.

CARNATION AND CUCUMBER: P. S. Tudor. On the first-named we find neither fungus nor eelworms, but evidence of a badly-rooted layer. There must be something in that, or the soil, situation, or treatment are at fault. Is the bed in which the plants grow low-lying, or liable to get very wet from rain, &c., from off the walks, finding its way into it? The Cucumber plant may be suffering from eelworms in the roots. Half a Cucumber and no information given, do not afford us much clue to the cause.

CHRYSANthemum: Oxonian. You do not say whether you require specimen plants or blooms. In any case it is now too late to stop the plants again, especially as they were stopped in May. If specimen plants are required, allow all the growths to remain that result from the next natural break, thinning the flower-buds to one on a shoot; if for large blooms, restrict the branches to four on a plant, retaining the central flower-bud on each shoot as they appear at the end of August. The cause of the shoots going blind is most probably caused by an attack of thrip, or being punctured by a minute insect known as the "jumper." Dust the points of the shoots with Tobacco-powder, if there is the slightest appearance of insect trouble; or occasionally syringe the plants with petroleum emulsion or quassia extract. E. M.

CUCUMBERS: H. H. The roots are badly infested with eel-worms, often described and figured in these columns. Turn your plants out and burn them. Clear out all the soil, and use fresh loam that has been stacked for a long time.

FELLOW OF R. H. S.: J. H. McG. A letter to the Secretary's Offices, 117, Victoria Street, Westminster, would elicit a reply to your queries.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—A. B. Streptosolen Jamesoni, native of New Granada, introduced in 1846, and figured in the *Botanical Magazine*, t. 4605, as *Browallia Jamesoni*. Figured in the *Gardeners' Chronicle*, June 21, 1884, p. 797.—R. K. *Lælia tenebrosa*, a very fine variety.—J. C., *Birchington*. *Crinum scabrum*, Herbert.—J. S. W. 1, *Rosa alpina*; 5, *Saxifraga Andrewsii*; 6, *Saxifraga aizoon*.—A. B. *Saxifraga Sibthorpi*, native of Greece.—W. H. B. 1, *Asphodelus ramosus*; 2, *Asphodeline lutea*.—F. W. B. 4, *Senecio Doronicum*; 7, *Rudbeckia fulgida*; No number, *Scorzonera hispanica*.—Doubts. We share your doubts. The leaves look like those of *Ribes aureum*, but are much drawn.—Novice. 1, *Cupressus (Retinospora) obtusa*; 2, *Pyrus intermedia*; 3, *Spiræa confusa*; 4, *Abies Pinsapo*; 5, *Cupressus pisifera* var. *plumosa aurea*, commonly

called *Retinospora*; 6, perhaps *Daphne Cneorum*, but there are no flowers.—S. P. 1, *Ceanothus azureus*, probably; 2, *Festuca ovina*; 3, a *Heli-anthemum*; 4, *Cratægus coccinea*; 5, *Cotoneaster Simonsii*; 6, *Cotoneaster Nummularia*.—Hextable. *Tamarix gallica*.—G. W. *Phytolacca decandra*.

SEEDS OF DRIED GRAPES: C. A. L. That the plants raised from grocer's Raisins, or other Continental varieties of the Grape, would bear fruit if grown in a viney in this country, is a matter of certainty; but is it worth while? The readiest method of fruiting them would be to grow seedlings in pots in a warm-house for the summer months, resting them in winter in a cold one, or out-of-doors, with their roots protected by coal-ashes. This course should last two or three years, according to the strength of the Vines, cutting the canes down to the ground each year, and in the summer of the last year of the course, inarching the half-matured wood on to shoots of similar thickness on established Vines, cutting away the young Vines after a thorough union had taken place. These inarched shoots, if stopped at the fourth or fifth joint, would bear fruit the following year.

STARLINGS, RED AND BLACK MOTH, AND GREEN SPIDER: A. Worsley, Isleworth. Starlings are decidedly fond of Cherries, and are often very destructive to the fruit in localities where it is grown on a large scale. The bird is, however, by no means generally destructive to fruit, and is everywhere a friend to the agriculturist. Its food consists largely of dung-feeding beetles (*Aphodiidæ*), weevils, and elaters. It also feeds extensively upon Lepidopterous larvæ, and the grubs of the crane-flies, and almost every other kind of insect procurable in meadows and field crops. No wise farmer would think of destroying starlings, but large fruit-growers who suffer from their depredations must of necessity do so. The insects mentioned above as the food of the starling are chiefly from post-mortem examinations. The spider is a fairly common British species of the genus *Linyphia*. The Red and Black Moth, the common *Cinnabar* (*Euchelia Jacobæ*). It feeds in a wild state on Ragwort, and occasionally on the common Grousel (*Senecio* sp.). It is not a recognised pest, but might, in the absence of proper food, attack cultivated plants of the same or allied genus. The insect is common in my garden, and lives exclusively upon a few small patches of Groundsel which are purposely left for the larvæ. R. N.

THISTLE: A. H. Yes, the fungus is the same, or very closely allied to the *Chrysanthemum-rust*. See the report of the Scientific Committee in our present issue.

TOMATO DISEASED: J. B. It is useless for purposes of investigation for you to send a piece of a leaf sandwiched between two pieces of felt, and enclosed in an ordinary postal envelope. Send better material, enclosed in damp moss or blotting-paper, and the whole put into a secure box.

TOMATOS: W. T., Croftbank. You do not read your *Gardeners' Chronicle* very attentively, or you would know that this disease, due to a fungus, has been described and figured repeatedly. Burn the plants, and next year when you start again spray the young plants with Bordeaux Mixture, at intervals of a week or two.

SHRUB: W. T. Canning, Swanley. N part of a shrub found in envelope.

COMMUNICATIONS RECEIVED.—Amos Perry.—W. G. S.—Geo. Hansen.—Mrs. B.—G. M.—H. J. E., Bosnia.—Sutton & Sons.—T. D.—E. W. & Sons.—J. H. N.—Daniels Brothers.—J. Vrengdenhill, Haarlem.—H. Martinet, Paris.—H. Hubbard.—S. D.—A. O'N.—W. N. Craig, North Easton, Mass., U.S.A.—W. K.—T. S.—E. H. D'Ombain.—Ed. Mawley.—J. R. W.—H. T.—A. E. S.—W. G. S.—E. M.—R. D.—W. A. C.—A. D.—H. W. W.—S. Williams.—W. Jones.—R. P. B.—S. W.—S. A.—W. Nichols.—E. W.—F. T. M.—C. Warner.—A. K. Bulley.—W. Swan.—Alfred Watkins.—D. R.—Harrison Weir.—G. B. M.—E. M. H.—B. D. J.—G. H.—Anxious.—E. Cottam.—Ignoramus.—J. E. H.—Cumbrian.—G. H.—J. S.—R. B.

PHOTOGRAPHS, SPECIMENS, &c., RECEIVED WITH THANKS.—R. P. B., will appear shortly.

DIED.—JONATHAN SQUIBES, and his wife, FELICITE, within twenty-four hours of each other, at Oxted, Surrey, on June 21 and 22. We shall, in our next issue, relate the chief incidents of Mr. SQUIBES' career as a gardener.

(For Markets and Weather, see p. viii.)



THE LAKE, ENYS, CORNWALL. PHOTOGRAPHED BY S. WYNDHAM FITZHERBERT, ESQ.

